DeviceNet/PROFIBUS-DP Adapter

PD-100S

User Manual

REV 4.0

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Table of Contents

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1 About This Document

1.1 General

This document describes every parameters of the gateway PD-100S and provides using methods and some announcements that help users use the gateway. Please read this document before using the gateway.

1.2 Copyright Information

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1.3 Terms

DeviceNet: DeviceNet Protocol, accord with DeviceNet Protocol Release 2.0
PROFIBUS-DP: PROFIBUS-DP Protocol

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2 About the Gateway

2.1 Product Function

PD-100S exchanges data between DeviceNet and PROFIBUS-DP. It can connect a master device with DeviceNet interface to PROFIBUS-DP master.

Note: The order number is PD-100S when DeviceNet port acts as a slave, and the order number is PD-100 when DeviceNet port acts as a master.

2.2 Feature

▼**Widely Used**: Achieve the direct connection between DeviceNet network and PROFIBUS-DP network. Such as: Establish the communication between Rockwell, Omron PLC and Siemens S7 PLC.

▼**Easy Implementation**: Referring to the manual and the examples provided, users can establish the connection quickly.

▼**Transparent Communication**：User can accord the mapping relationship between PROFIBUS communication data area and DeviceNet communication data area to achieve the transparent communication between PROFIBUS and DeviceNet.

2.3 Technical Specification

[1] PROFIBUS DP/V0 slave; Follow EN50170 and JB/T 10308.3-2001: The chapter 3 of measurement and control of digital data communications Industrial Control System: PROFIBUS standard;

[2] Up to 224 bytes input and 224 bytes output, user can also select 32, 96, 48, 112, 72, 160, 192 bytes;

[3] PROFIBUS-DP interface and DeviceNet interface have independent 2.5KVphotoelectric isolation;

[4] Act as a slave at the side of DeviceNet, and support Poll I/O;

[5] DeviceNet baudrate: 125K, 250K, 500Kbps and Auto baudrate;

[6] Supply many LED status lights indicating network status;

[7] Power: DC 11-26V; 4W@24V;

[8] Operating temperature: -40 ~ 60 ℃; Humidity: 5 to 95% (No Condensing);

[9] Mechanical Dimension: 125mm (H) × 40mm (W) × 110mm (D);

[10] Installation: 35mm rail;

[11] Protection Level: IP20;

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2.4 Attention

♦ To prevent stress, prevent module panel damage;

♦ To prevent bump, module may damage internal components;

♦ Power supply voltage control in the prospectus, within the scope of the requirements to burn module;

♦ To prevent water, water module will affect the normal work;

♦ Please check the wiring, before any wrong or short circuit.

2.5 Related Product
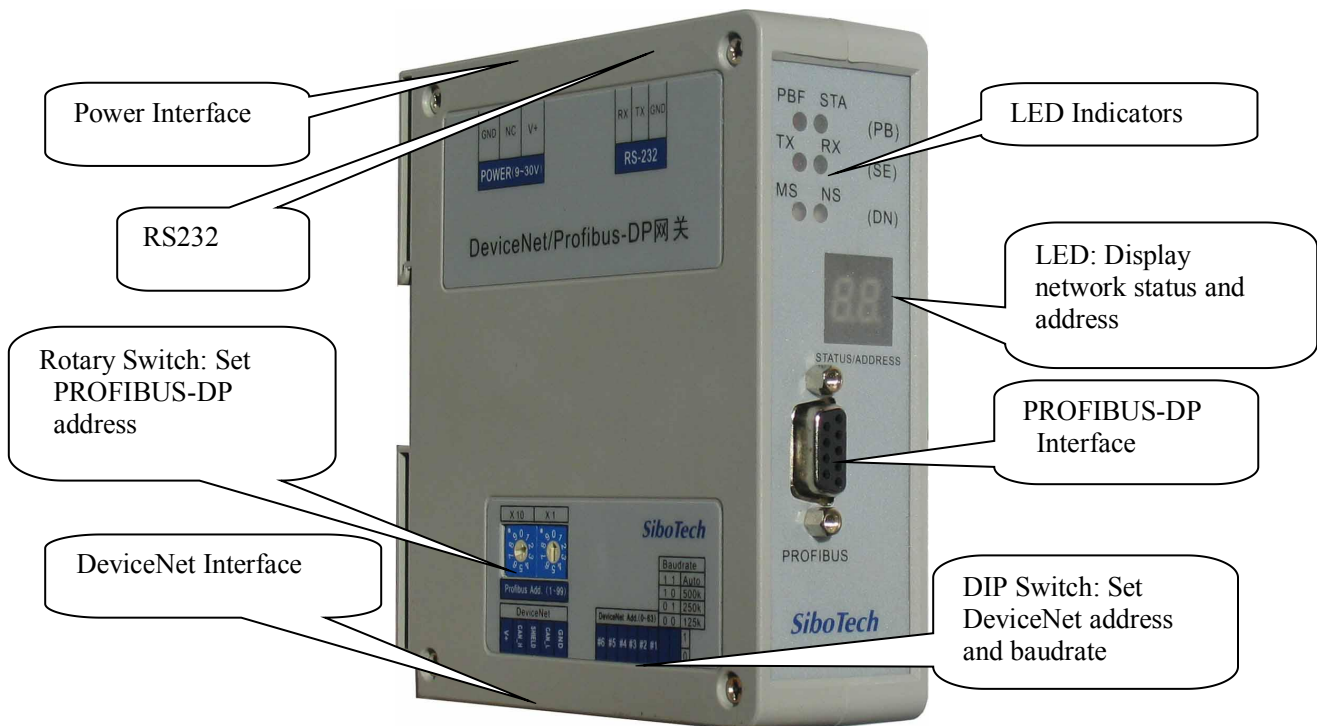
Other related products in SiboTech:

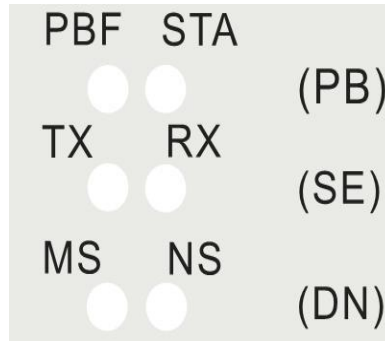PD-100 and so on.

If you want to gain some products' instructions above, please visit our website http://www.sibotech.net/en , or call technical support hot line: +86-21-5102-8348.

3 Hardware Description

3.1 Product Appearance

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3.2 Indicators

DeviceNet Module Status Indicator (MS)

Status	Description
Off	Without power supply or indicator may be bad
Always Green	Work properly
Green Blinking	Incorrect configuration, or in baud rate interception status
Red Blinking	Recoverable fault
Always Red	Unrecoverable fault
Red – Green Blinking	Self testing

DeviceNet network status indicator (NS)

Status	Description
Off	DeviceNet without power
Green Blinking	Device is online, but not connection
Always Green	Device is online and there is a connection
Red Blinking	One or more connection timeout
Always Red	Device detects an unrecoverable fault, and can not communicate, For example, DeviceNet address repeat

RS232 interface indicator (SE)

| Status	Description
TX Off	Serial has no data sent
TX Red Blinking	Serial is sending data
RX Off	Serial has no data received
RX Green Blinking	Serial is receiving data

PROFIBUS-DP network status indicator (PB)

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| Status	Description
PBF Off	Communication is OK
PBF Always Red	PROFIBUS-DP communication fails
STA Off	PROFIBUS-DP is not communicating
STA Green Blinking	PROFIBUS-DP is communicating

3.3 Configuration Switch

Setting switch of PROFIBUS-DP address:

A   B
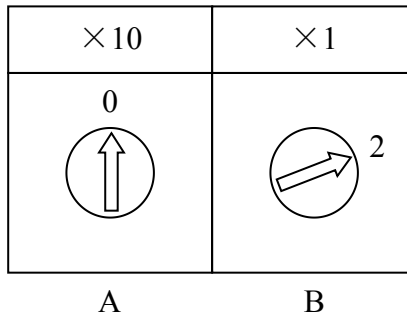
PROFIBUS-DP address is calculated as:

PROFIBUS-DP Address=（A×10）＋（B×1）

Description of DIP switch being used setting DeviceNet address and baud rate :
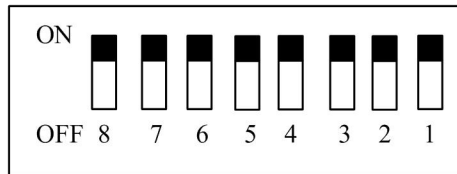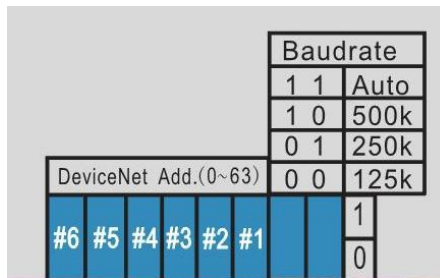
3-8 bits switches are the DeviceNet address setting switches, and they correspond with DeviceNet address #1bit - # 6bit. They use binary coding (On is 1,Off is 0).

1 and 2 bits are used setting DeviceNet baudrate:

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bit2	bit1	baud rate
1	1	self-adaptive
1	0	500K
0	1	250K
0	0	125K

3.4 LED

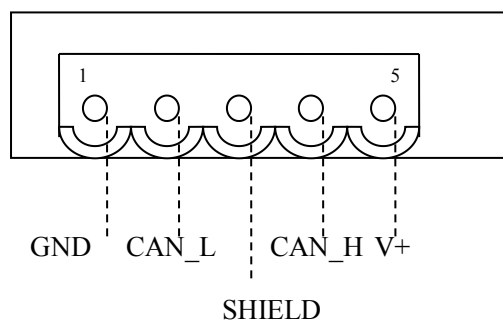The main contents of LED include: DeviceNet address and PROFIBUS-DP address. After power on, LED successively display "pb", the current PROFIBUS-DP address, "dn" and the current DeviceNet address.

3.5 Interface

3.5.1 DeviceNet Interface Wiring Instructions

5-pin connector at the side of DeviceNet:

GND CAN_L CAN_H V+

SHIELD

- ✧ 1-pin GND
- ✧ 2-pin CAN_L
- ✧ 3-pin Shield
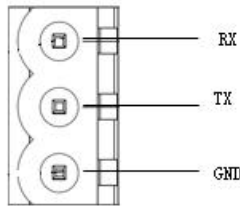- ✧ 4-pin CAN_H
- ✧ 5-pin +24V

Note: V+, GND of DeviceNet interface interlinks V+, GND of power interface. So an external power supply only one interface can be connect, can not simultaneously connected to the two interface power supply.

3.5.2 PROFIBUS-DP Interface

PROFIBUS-DP wiring description show as follow:

DB9 Pin	Functions
1	NC（No connect）
2	NC
3	PROFI_B(Must be connected), Data positive
4	RTS
5	GND
6	PROFI_5V
7	NC
8	PROFI_A(Must be connected), Data negative
9	NC

3.5.3 RS232 Interface

Configuration interface, and after connecting with computer, users can modify PD-100S configuration parameters through Hyper Terminal. Specific configuration steps, see Chapter 6.

3.5.4 Power Interface
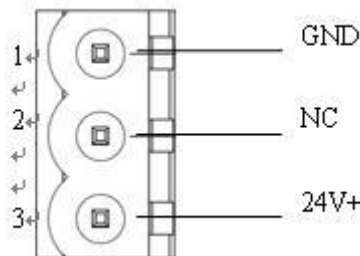
Pin	Function
1	GND
2	NC, no connection

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3	24V+, Positive 24V DC

Note: This interface of the V +, GND and DeviceNet interface in the V +, GND are internally connected. So an external power supply only one interface can be connect, can not simultaneously connected to the two interface power supply.

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4 Run

The data converter of PD-100S between DeviceNet and PROFIBUS can be made by "mapping". There are two data buffers in gateway, one is PROFIBUS Network Input Buffer, and the other is PROFIBUS Network output buffer. DeviceNet writes data which has been read from devices into Network Input Buffer, and write data to DeviceNet device through POLL I/O write commands from Network Output Buffer.

Input Buffer	Output Buffer
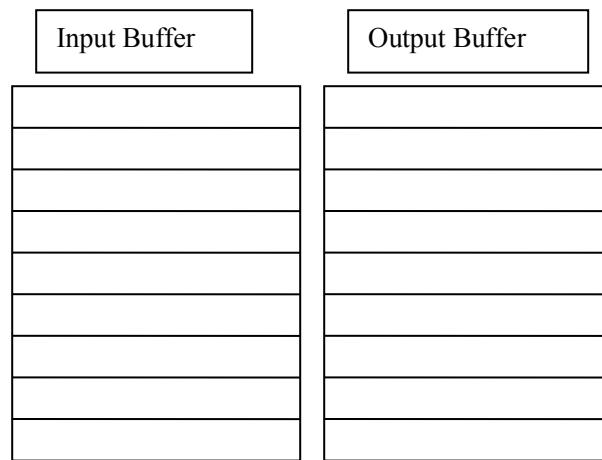
PD-100S not only act as a DeviceNet slave node, as well as a PROFIBUS-DP slave node, and need to take up a node address.

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5 Quick Application Guide

Use the following steps to apply your PD-100S:

1) According to the configuration steps configure gateway, refer to chapter 6.

2) Setting PROFIBUS-DP address through the rotary switch of the gateway, refer to chapter 3.3.

3) Setting DeviceNet address and baud rate through the DIP switch under of the gateway, refer to chapter 3.3.

4) Correctly wiring in accordance with the instruction, refer to chapter3.5.

5) Install EDS file to DeviceNet configuration software (such as RSNetWorx), and configure DeviceNet Network. The user can configure the DeviceNet scan commands and the data mapping from DeviceNet to PROFIBUS-DP, refer to chapter7.

6) Install GSD file to PROFIBUS-DP configuration software (such as STEP 7), and map the PROFIBUS-DP input-output to the PLC or other devices, refer to chapter 8.

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6 Gateway Configuration Instructions

Users can connect the gateway to PC through Gateway's RS232 interface and 232 direct cable (Together with the PD-100S to the client, one terminal end is 3-pin connector, and the other end is the DB9 connector) and configure the gateway through Hyper Terminal. **Take all DIP switches of the gateway to off, and the value of the rotary code switches to 0, re-power the gateway and the gateway enter the configuration mode.**
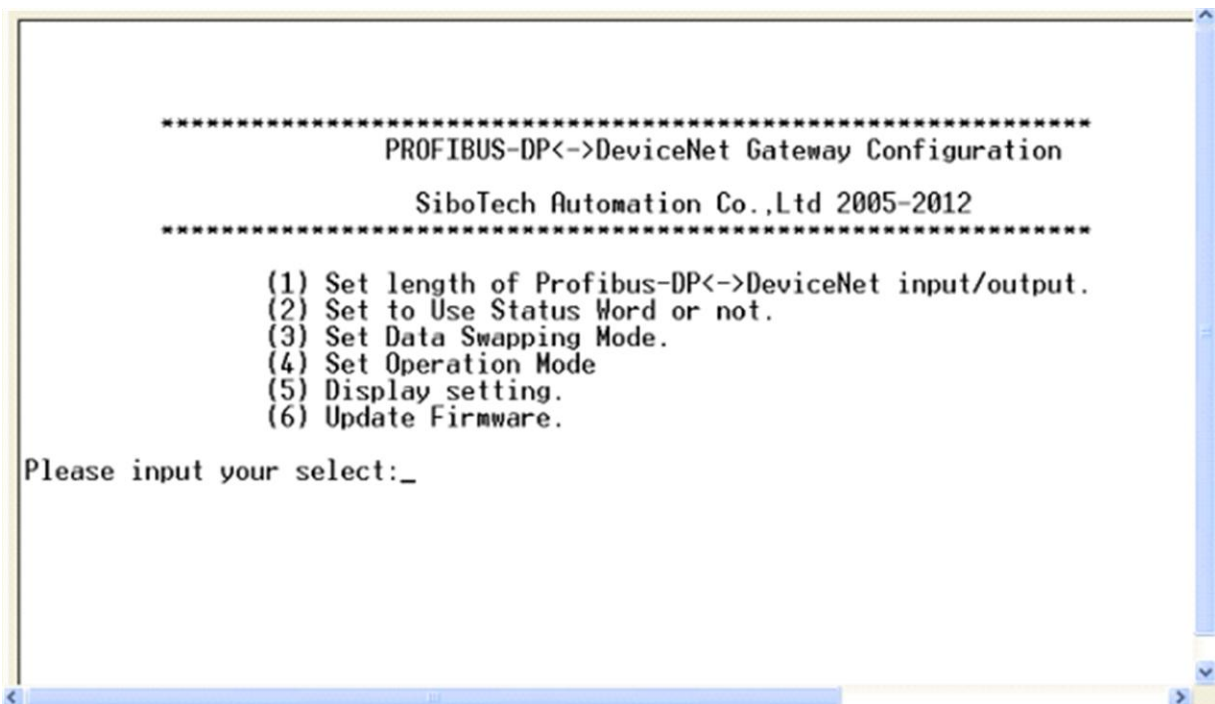
6.1 Setting Hyper Terminal

You can find the Hyper-Terminal in "Windows — Start — All programs — Accessories — Communications — Hyper Terminal". Select the port being connected to PD-100S, and the port settings are shown as follows:

9600, 8, None, 1 None.

6.2 Main Menu

After setting the Hyper-Terminal, power on the module, STA always Green, PBF always Red, MS always Green, and the main menu will be displayed. As the following picture shows:


```
***********************************************************
            PROFIBUS-DP<->DeviceNet Gateway Configuration

              SiboTech Automation Co.,Ltd 2005-2012
***********************************************************
        (1) Set length of Profibus-DP<->DeviceNet input/output.
        (2) Set to Use Status Word or not.
        (3) Set Data Swapping Mode.
        (4) Set Operation Mode
        (5) Display setting.
        (6) Update Firmware.

Please input your select:_
```

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Item (1): Set input and output bytes length of PROFIBUS-DP and DeviceNet. 32, 96, 48, 112, 72, 160, 192, 224bytes can be selected and the default is 48 bytes;

Item (2): Open or close the DeviceNet network status word. When you select Open, the last two bytes of the network input data is the status word. You can select "Clear Data" or "Keep Last Data" the input data when a network breaks.

Item (3): Set data exchange mode, No swapping, Two bytes swapping, and Four bytes swapping;
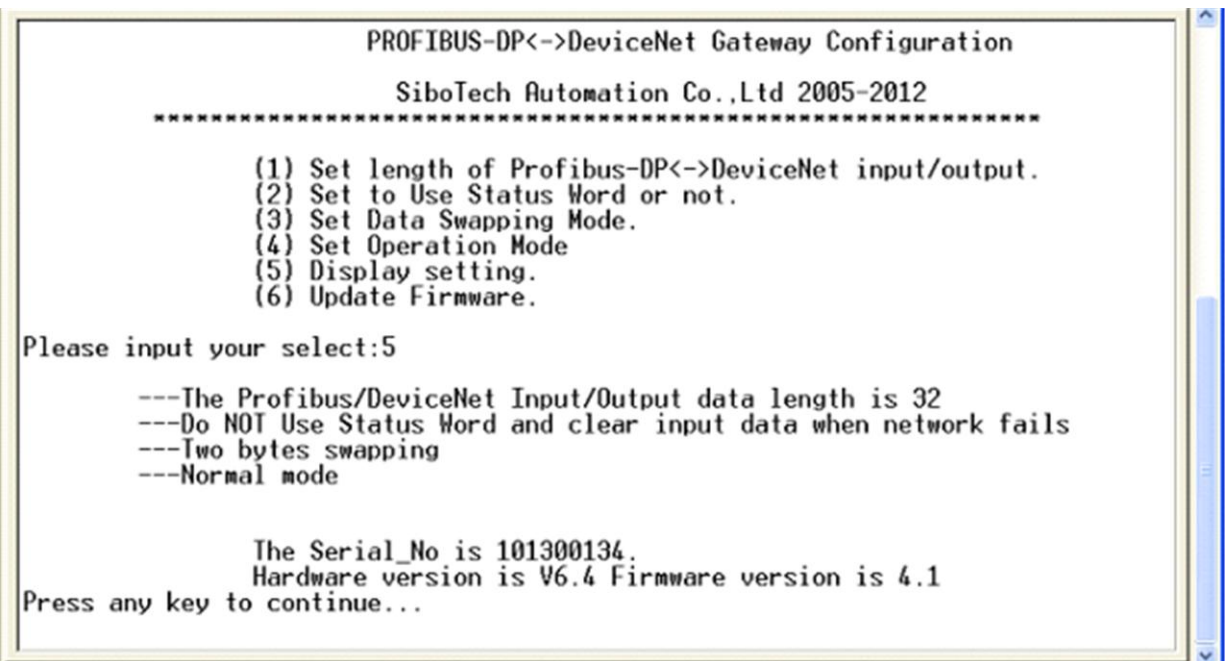
Item (4): Set operating mode, Compatible mode (Support PD-100SV31) and Normal mode(PD-100SV41).

Item (5): Display the current settings. Input and output bytes length of PROFIBUS-DP and DeviceNet, Use the status word or not, Data exchange mode and product serial number, hardware version, firmware version;

Item (6): Update the firmware.

6.2.1 Show the Current Configuration

Select 5 in the configuration main page, and it will show all current configuration. For the first time into the Hyper-Terminal configuration page, can view the configuration by selecting the option to determine what needs to be modified:

```
        PROFIBUS-DP<->DeviceNet Gateway Configuration

           SiboTech Automation Co.,Ltd 2005-2012
    ******************************************************

        (1) Set length of Profibus-DP<->DeviceNet input/output.
        (2) Set to Use Status Word or not.
        (3) Set Data Swapping Mode.
        (4) Set Operation Mode
        (5) Display setting.
        (6) Update Firmware.

Please input your select:5

        ---The Profibus/DeviceNet Input/Output data length is 32
        ---Do NOT Use Status Word and clear input data when network fails
        ---Two bytes swapping
        ---Normal mode


        The Serial_No is 101300134.
        Hardware version is V6.4 Firmware version is 4.1
Press any key to continue...
```

6.2.2 Set Input and Output Bytes

Select 1 in the configuration main page and it will show the current number of input and output bytes and other options. As shown below:

When you need to change the settings, you can set input and output bytes through inserting the different number of bytes. The figure chooses 3, namely 48-byte input and output.

6.2.3 Set Status Word

Select 2 in the configuration main page and it will show status word set options and current configurations. As shown below:

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```
                          (9) 244 bytes

Please input your select:3          Your Selection is 3


            ************************************************
                    PROFIBUS-DP<->DeviceNet Gateway Configuration

                    SiboTech Automation Co.,Ltd 2005-2012
            ************************************************

                (1) Set length of Profibus-DP<->DeviceNet input/output.
                (2) Set to Use Status Word or not.
                (3) Set Data Swapping Mode.
                (4) Set Operation Mode
                (5) Display setting.
                (6) Update Firmware.

Please input your select:2

                Current Setting is <Using Status word>

                Press y for Using status word or n to disable it

_
```

When you need to change the settings, you can follow the prompts, enter "y" for using status word, that is, the last two bytes of input data show the network status of another network. Enter "n" to disable it.

When you enter "y", it will pop-up "clear or not" option:

Option 1: Clear Data;

Option 2: Keep Last Data.

Note: When choose not to use status words, input data of breaking network will be cleared forcibly.

As shown below:

```
************************************************************
          PROFIBUS-DP<->DeviceNet Gateway Configuration

              SiboTech Automation Co.,Ltd 2005-2012
************************************************************
        (1) Set length of Profibus-DP<->DeviceNet input/output.
        (2) Set to Use Status Word or not.
        (3) Set Data Swapping Mode.
        (4) Set Operation Mode
        (5) Display setting.
        (6) Update Firmware.

Please input your select:2

        Current Setting is <Using Status word>

        Press y for Using status word or n to disable it
y
To use the functionality of clear input data when either network fails:
        (1) Clear data.
        (2) Keep latest data.    Please select:
```
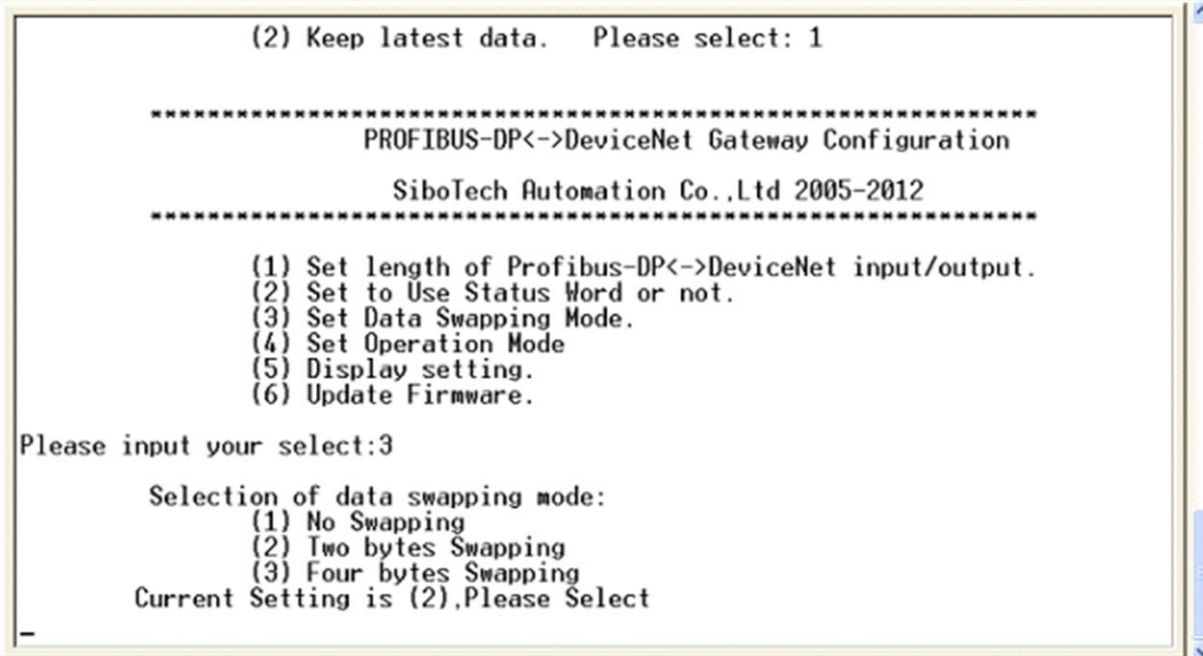
6.2.4 Setting Data Exchange Methods

Selected 3 in the configuration main page, shows data exchange options and all current configurations. As shown below:

Option 1: No swapping;

Option 2: Two bytes swapping;

Option 3: Four bytes swapping;

Configuration options as shown below:

```
                  (2) Keep latest data.    Please select: 1


            ***********************************************************
                       PROFIBUS-DP<->DeviceNet Gateway Configuration

                         SiboTech Automation Co.,Ltd 2005-2012
            ***********************************************************
                  (1) Set length of Profibus-DP<->DeviceNet input/output.
                  (2) Set to Use Status Word or not.
                  (3) Set Data Swapping Mode.
                  (4) Set Operation Mode
                  (5) Display setting.
                  (6) Update Firmware.

    Please input your select:3

                  Selection of data swapping mode:
                      (1) No Swapping
                      (2) Two bytes Swapping
                      (3) Four bytes Swapping
                  Current Setting is (2),Please Select
    _
```

6.2.5 Setting Operation Modes

Selected 4 in the configuration main page, shows operation mode options and current configurations.

Option 1: Compatible mode (Support PD-100SV31 and user can use EDS file and GSD file of PD-100SV31)

Option 2: Normal mode (PD-100SV41)

Configuration options as shown below:

```
*****************************************************************
              PROFIBUS-DP<->DeviceNet Gateway Configuration

                 SiboTech Automation Co.,Ltd 2005-2012
*****************************************************************
        (1) Set length of Profibus-DP<->DeviceNet input/output.
        (2) Set to Use Status Word or not.
        (3) Set Data Swapping Mode.
        (4) Set Operation Mode
        (5) Display setting.
        (6) Update Firmware.
Please input your select:4

        Please select operation mode:
                (1) Compatible mode (To set new PD-100S to be compatible with V3
.1)

                (2) Normal mode
        Current Setting is (2),Please Select
```

When select "2", it select "Normal mode". As the following picture shows:

```
        Please select operation mode:
                (1) Compatible mode (To set new PD-100S to be compatible with V3
.1)

                (2) Normal mode
        Current Setting is (2),Please Select
2               Your Selection is 2



        *****************************************************************
              PROFIBUS-DP<->DeviceNet Gateway Configuration

                 SiboTech Automation Co.,Ltd 2005-2012
        *****************************************************************
        (1) Set length of Profibus-DP<->DeviceNet input/output.
        (2) Set to Use Status Word or not.
        (3) Set Data Swapping Mode.
        (4) Set Operation Mode
        (5) Display setting.
        (6) Update Firmware.
Please input your select:_
```

6.2.6 Update Firmware

Select 5 in the configuration main page, it shows "Press y to enter the mode to update the firmware. Press any other key to exit".

At this moment, enter "y" to enter the updating firmware mode, enter the other value can exit updating firmware. Enter "y", it will show "Please close the serial port and start the firmware upgrading program", show as below:

```
                    The Serial_No is 101300133.

                Hardware version is V6.4 Firmware version is 4.0
Press any key to continue...
6


        ***********************************************************
                    PROFIBUS-DP<->DeviceNet Gateway Configuration

                    SiboTech Automation Co.,Ltd 2005-2012
        ***********************************************************


            (1) Set length of Profibus-DP<->DeviceNet input/output.
            (2) Set to Use Status Word or not.
            (3) Set Data Swapping Mode.
            (4) Set Operation Mode
            (5) Display setting.
            (6) Update Firmware.

Please input your select:6
        Press y to enter the mode to update the firmware. Press any other key to
 exit
y
Please close the serial port and start the firmware upgrading program.
_
```

Follow the prompts, after disconnecting with the Hyper Terminal, the updating firmware operation can be carried out.

Note 1: After disconnecting with the Hyper Terminal and before updating the firmware, the keyboard can not be entered any values to prevent these values affect the product firmware via the serial port.

Note 2: Number of input and output bytes of PROFIBUS-DP and DeviceNet and data swapping methods which is set in Hyper Terminal can be also configured in the fieldbus network, specifically in the chapter 7and 8.

Note 3: To exit configuration mode, you just need to set dial switches and rotary switches to a non-zero value, re-power the gateway and the gateway go into the normal operating state.

7 DeviceNet Network Configuration Instructions

After register the PD100S.EDS in the CD-ROM to DeviceNet configuration software, users can configure via the software.

7.1 EDS Register

EDS（Electronic Data Sheet）is comprehensive description which supports DeviceNet network function. It equals to equipment's driver of Windows. Users need install EDS files to DeviceNet network configuration software, such as RSNetWorx and so on, and then the configuration can be going on through network configuration software.

Here we take Rockwell's RSNetWorx for example (edition 4.12.0), and explain how to install. For further details, please refer to the network configuration software instructions.

Step1: Create a new network configuration profile
Step2: Select EDS operation guide, select "Tools" and then "EDS-Wizard", you will see that:

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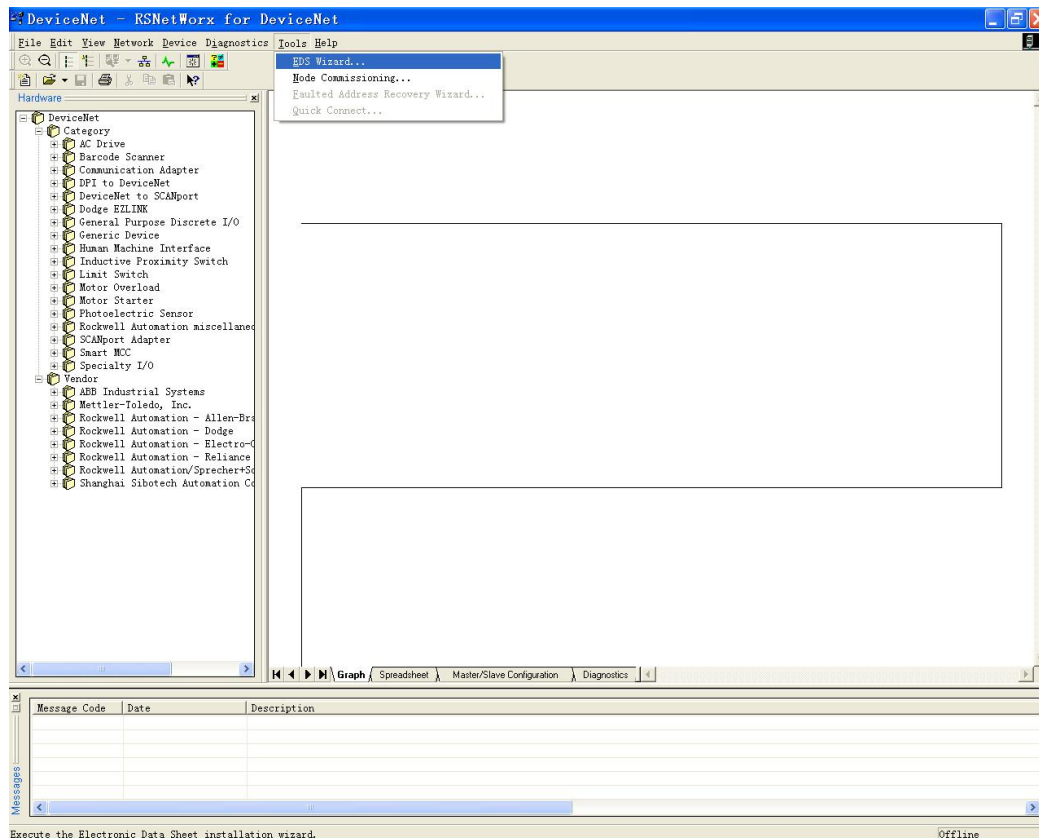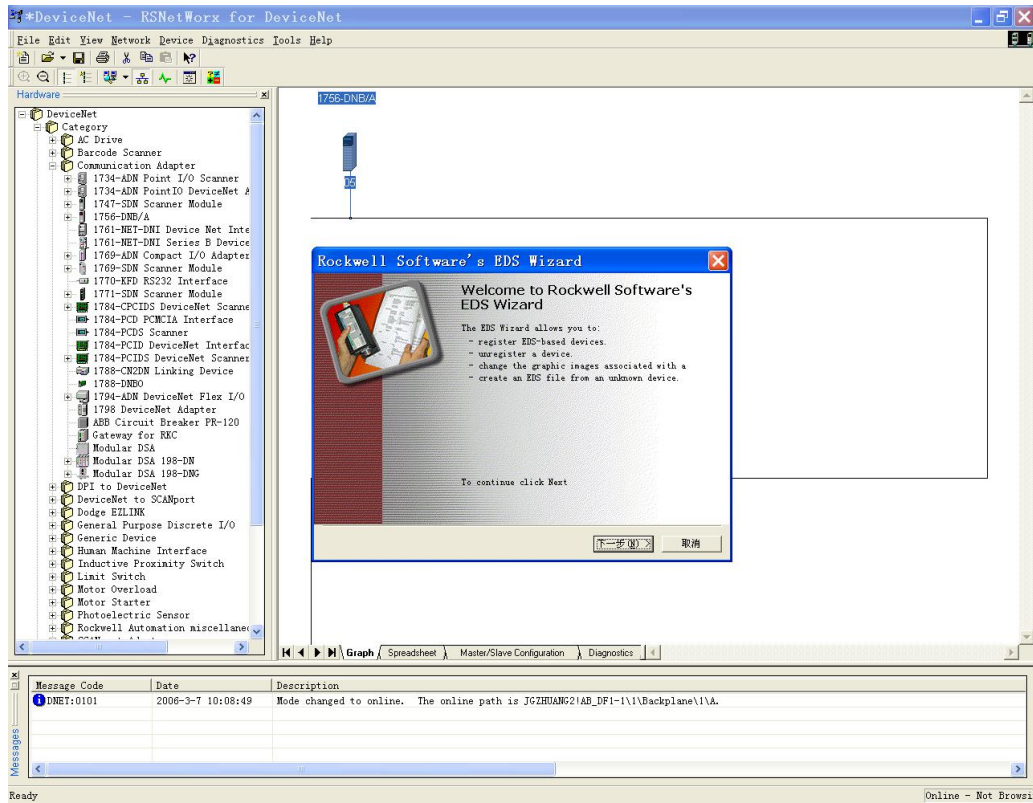
Step3: Select "NEXT", as follow:
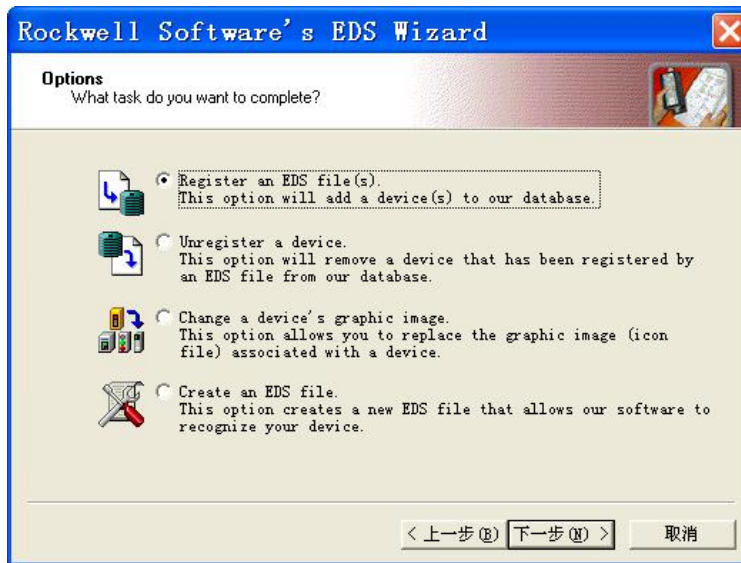
Step4: Install gateway PD-100S

Shown as above, select "Register an EDS file", as follow:

Please register PD-100S.EDS file we provided, according to the place where you save EDS file, and select the

file.

Step 5：Select the file registering to choose
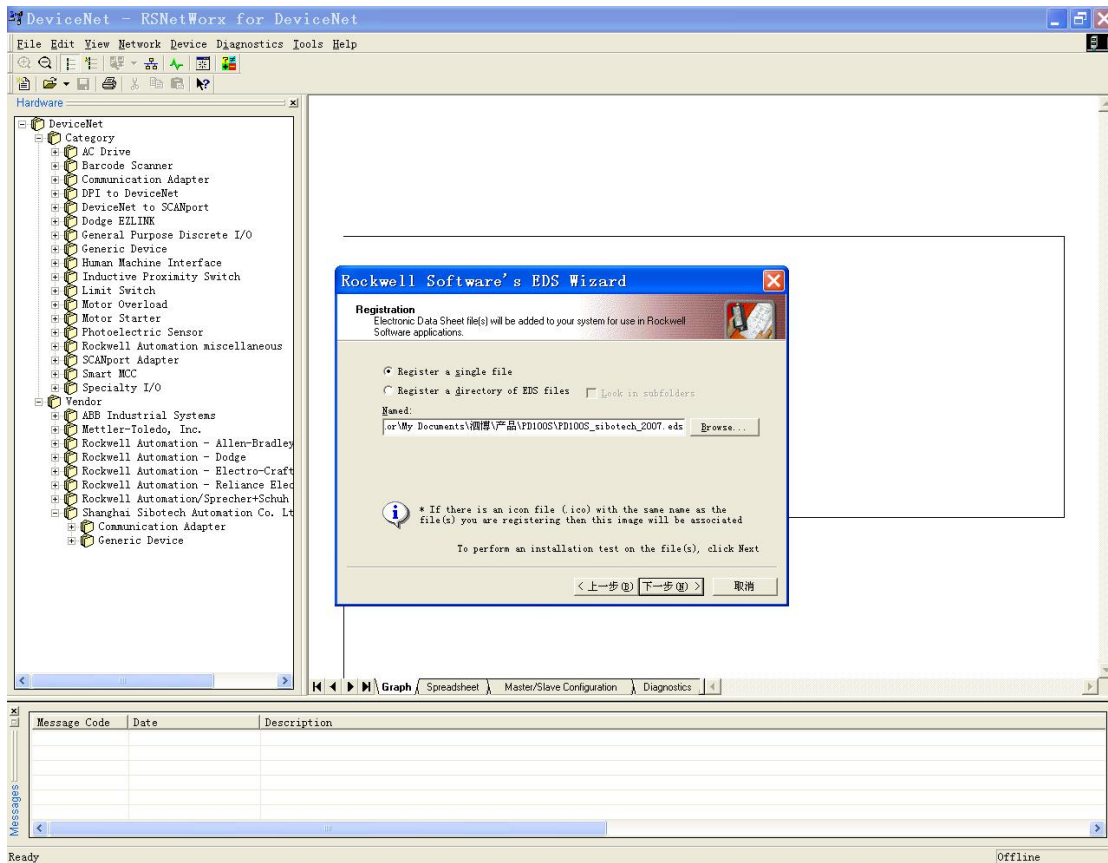
Click "NEXT" :
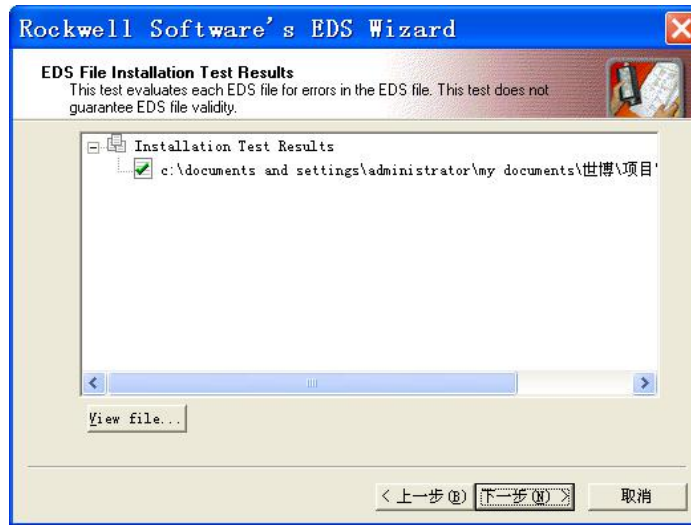
Step 6: Select the icon.

Following network configuration software will prompt you the equipment category in equipment storehouse, you may choose icon in this process.
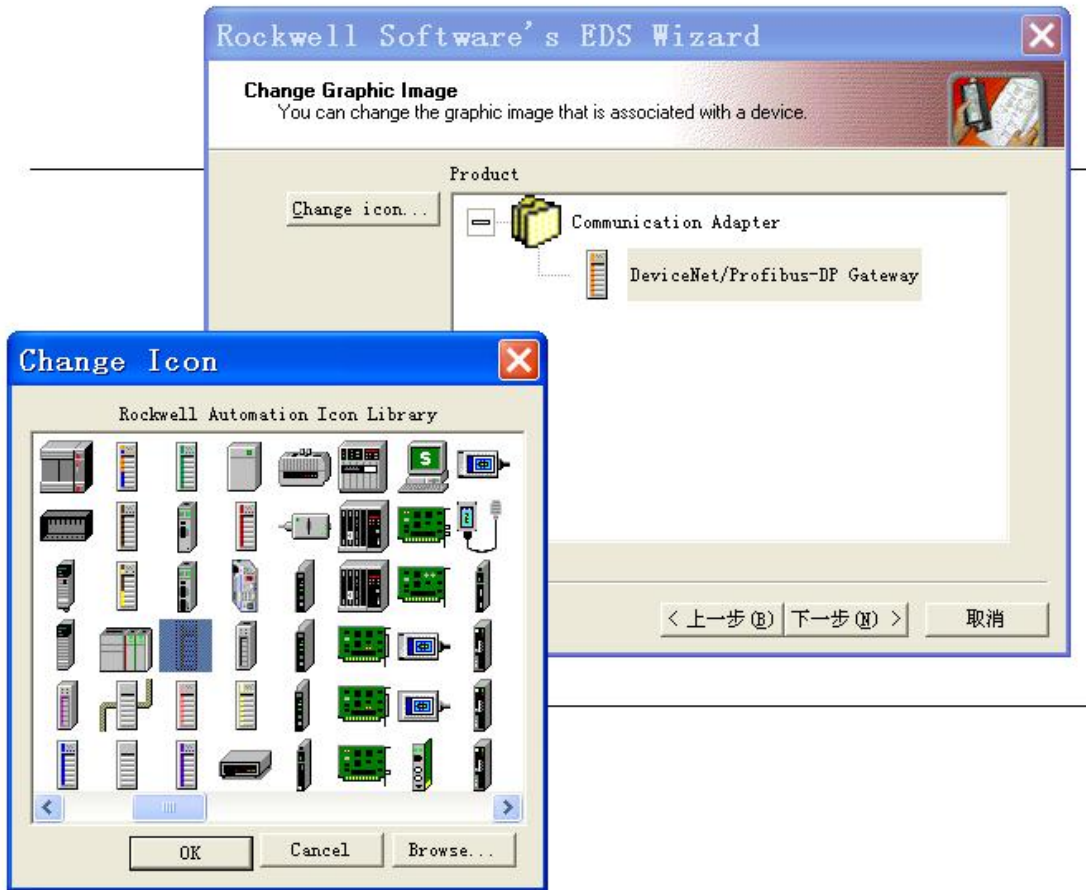
Here, the device has successfully registered to the icon library location of configuration software's equipment storehouse.
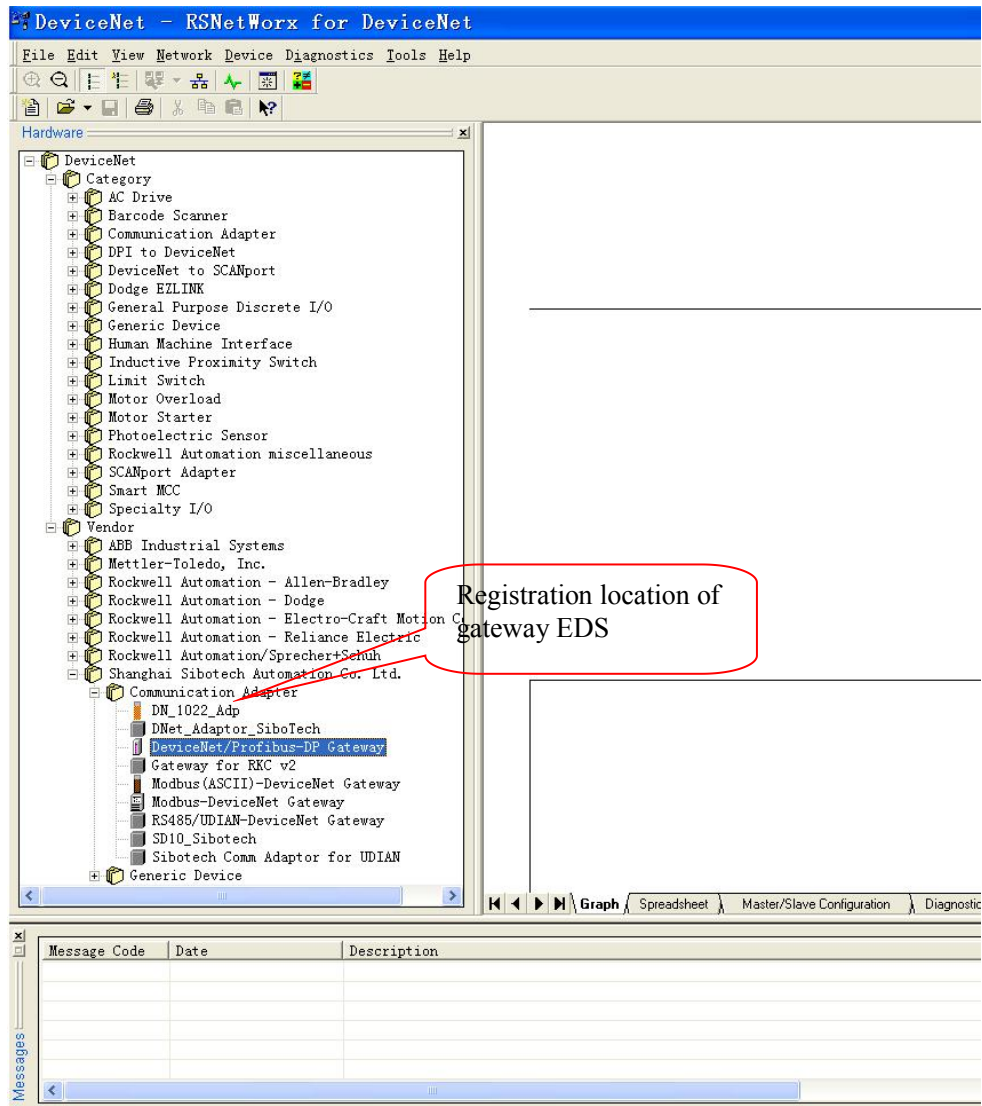
Then, you should connect gateway PD-100S to DeviceNet network, click "SCAN" button of RSNetWorx , or select "Network-Online" in menu bar, your gateway will be scanned by system and identified exactly.

7.2 DeviceNet Parameters Information

You can configurate devices online or offline. For details, please refer RSNetWorx manual.

The following configuration demonstrates are in "Offline" status.

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From the device catalog, you can find the "DeviceNet / PROFIBUS-DP Gateway" in "Vendor" (manufacturing number) and "Shanghai Sibotech Automation Co. Ltd." directory, and drag it into the editing area, select the device address matching with the actual address, then double-click the device, you will see the following screen:
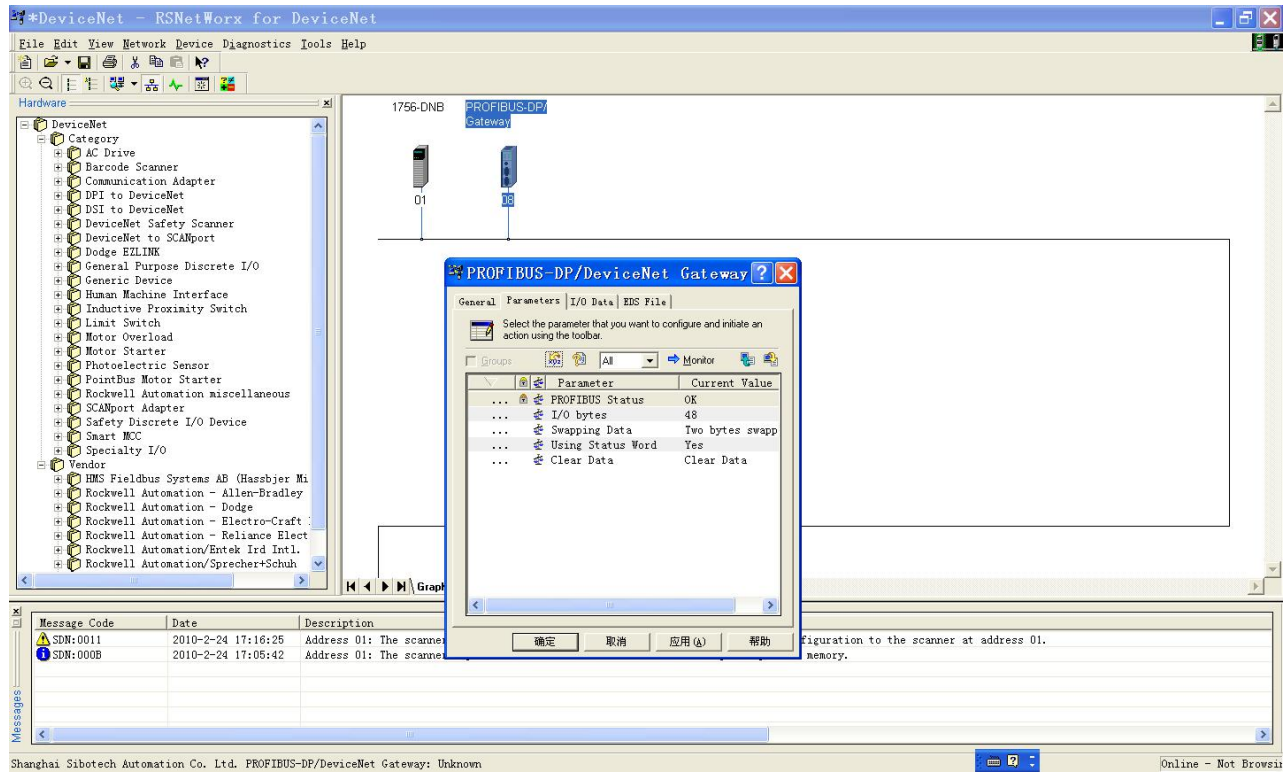
You can also modify the device address. Click the "Parameter", then you can enter the parameter interface:
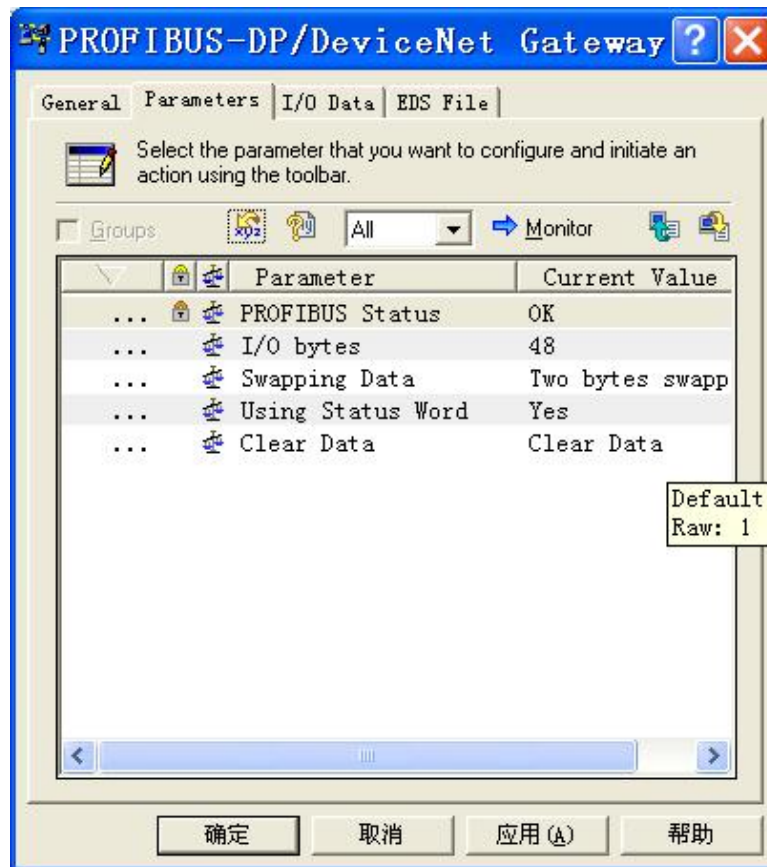
This is DeviceNet network configuration parameters interface of a device in RSNetWorx (PD-100S default configuration).

Note: If you modify number of I/O bytes in the interface, you need re-power the gateway to take the modification effect.

The first parameter is "PROFIBUS status", it shows the current PROFIBUS-DP state;

The second parameter is the "I / O bytes", it shows the DeviceNet input and output bytes, 32, 96, 48, 112, 72, 160, 192, 224 bytes are optional, and the default is 48 bytes. You need to restart the gateway after re-setting the parameter and downloading.

Users can accord the actual needs of bytes to choose the length of input and output bytes. After modifying the parameter; users need to pay attention to configure the scan list in 1756-DNB module (DeviceNet Master Module), which is the same with the parameter "I / O bytes".

Note: If you modify DeviceNet input and output bytes here, you have to modify the PROFIBUS-DP input and output bytes in PROFIBUS-DP configuration interface (PROFIBUS-DP master configuration software)! If you set the parameter is 48/48 bytes here, you must choose "48 byte input 48 byte output" at the PROFIBUS-DP side.

The third parameter is "Swapping Data", it shows whether to swap sequencing of the two networks when exchange data, you can select "No swapping" (not swap), "Two bytes swapping" (double-byte swap) and "Four bytes

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swapping" (4 bytes swap). After downloading the parameters, with immediate effect, power-down can be saved. The default is double-byte swap.

Note: If the mapping data is multi-byte variable, which being transmitted by PROFIBUS-DP is high-byte first, while being transmitted by DeviceNet is low-byte first, you need exchange the sequence of bytes. Some devices, such as PLC of GE which has data swapping function. Users can turn on this function according to their needs.

PD-100S also has data swapping function; you can choose "No swapping", "Two bytes swapping" or "Four bytes swapping".

For example: Select the "Two bytes swapping"

DeviceNet output:

1	2	...		3	4

2	1	...		4	3
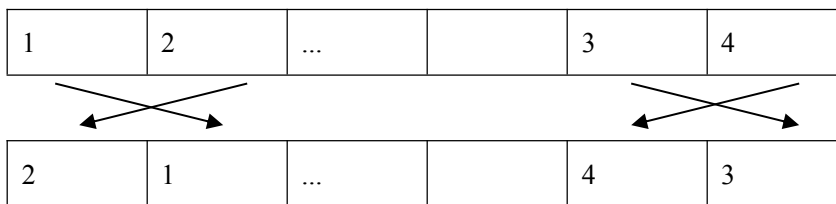
Input data of PROFIBUS-DP.

For example: Select the "Four bytes swapping"

DeviceNet side output:

1	2	3	4	5	6	7	8	...	

4	3	2	1	8	7	6	5	...	
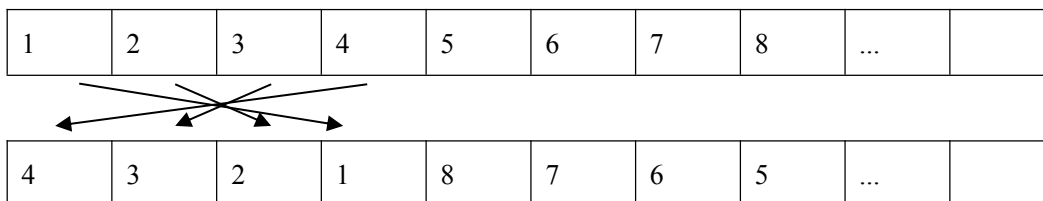
Input data of PROFIBUS-DP.

Note: If the mapping data is multi-byte variable, which being transmitted by PROFIBUS-DP is high-byte first, while being transmitted by DeviceNet is low-byte first. This is determined by protocol. Users may need to exchange data sequence.

Note: When the fourth parameter is "Using status word", the last two bytes of the input data is the status word. The last two bytes do not exchange sequence.

The fourth parameter is "Using Status Word", whether to use the status word or not: "Yes" shows using the status word, "No" shows not using the status word. The default is "No".

The fifth parameter is the "Clear Data", whether to clear input-data of breaking network or not: "Clear Data" shows that it will clear the input-data of breaking network, "Keep Last Data" shows that it will not clear the input-data of breaking network. The default is "Clear Data".

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Note: When the fourth parameter is "No", the fifth parameter is forced to "Clear Data", which is clearing input-data of breaking network. At this point, if the choice is "Keep Last Data", download and re-upload, the parameter is still "Clear Data".

7.3 Configure PLC's I/O Scan List

This section briefly describes how to configure scanning parameters list of RSLogix5000 +1756 / DNB through RSNetWorx.
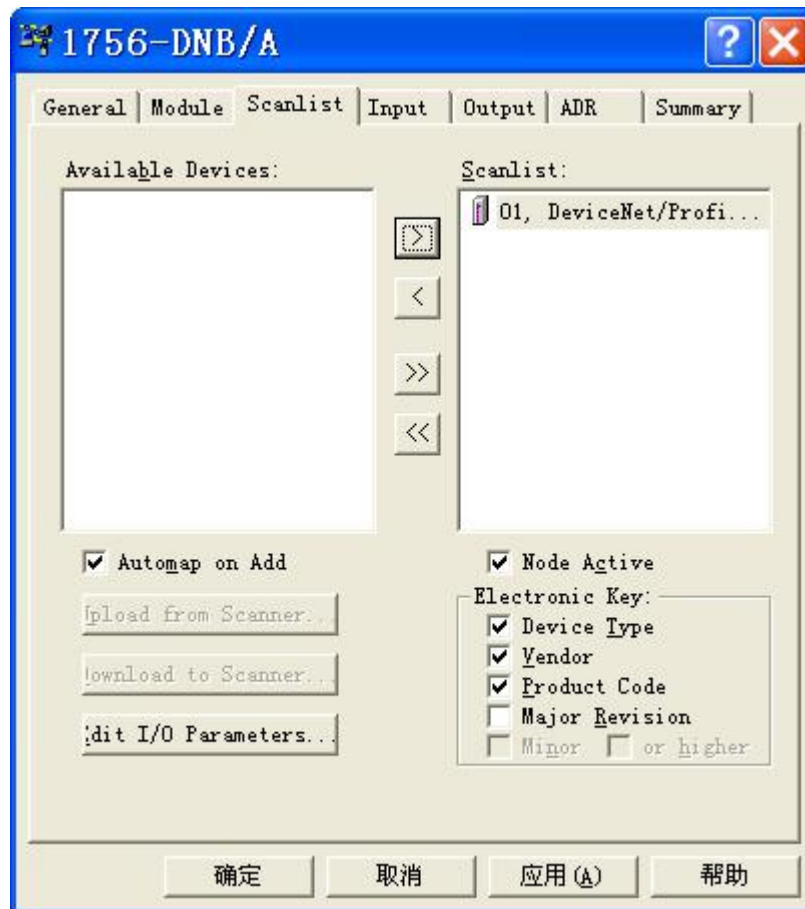
PLC platform: Rockwell's ControlLogix5555

DeviceNet interface card: 1756DNB

Configuration software: RSNetWorx

Step one: Open the parameters page of 1756DNB and go into the "Scan list" tab.
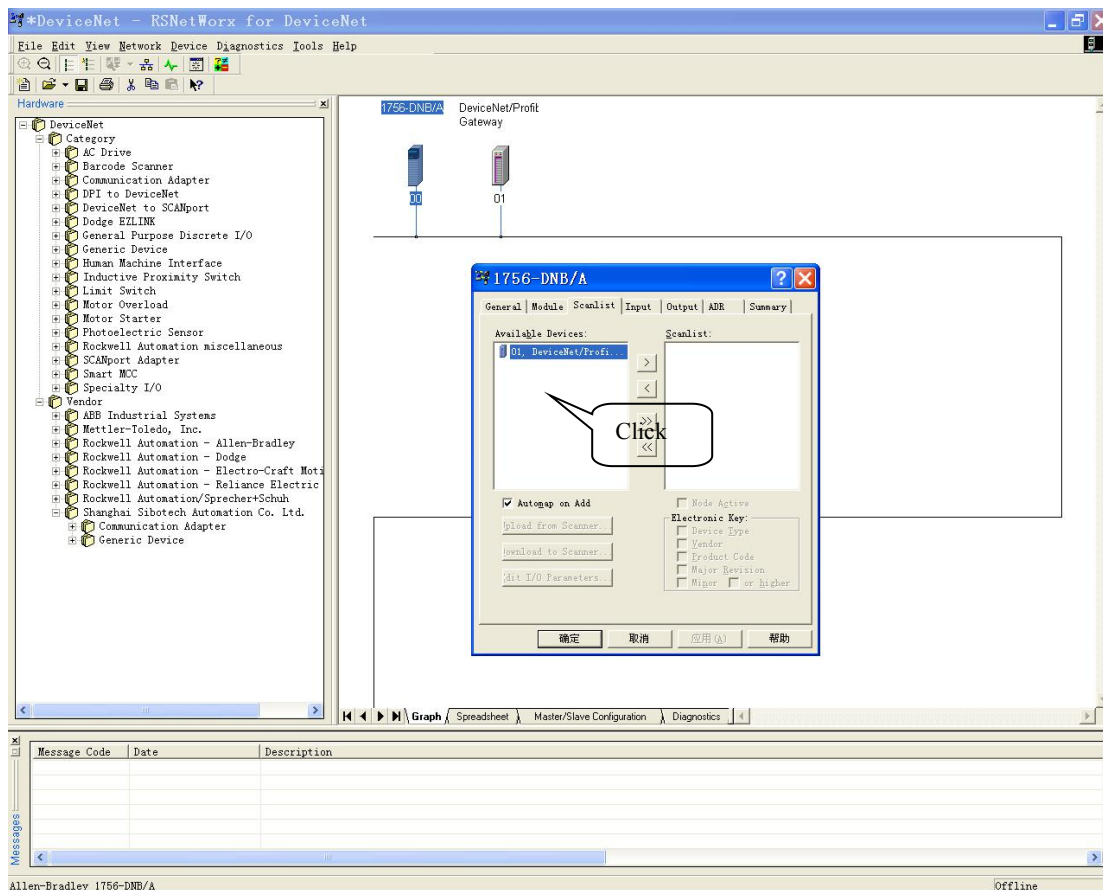
Step two: In this interface, select the device being added to the scanning list, then click the arrow button, and then you can see:

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Device is in the scan list of 1756-DNB DeviceNet Master.

If you know how to configure the DeviceNet, you can click on the "Edit I / O Parameters ..." and modify parameters, or click the confirmation directly, and add all the devices to the scan list.

After clicking the "Edit the I/O Parameters..." , you will see the diagram below, users can set the I/O data input and output mode: Polling, Cyclic, Change of state and so on. Users can also select the input / output bytes.

Note: The number of input and output bytes is a key! PLC / DeviceNet master will check input and output bytes here with the actual response of the device when establish a connection. If the number of bytes is not the same, the DeviceNet I / O connectivity can not be established, it can not be input and output.

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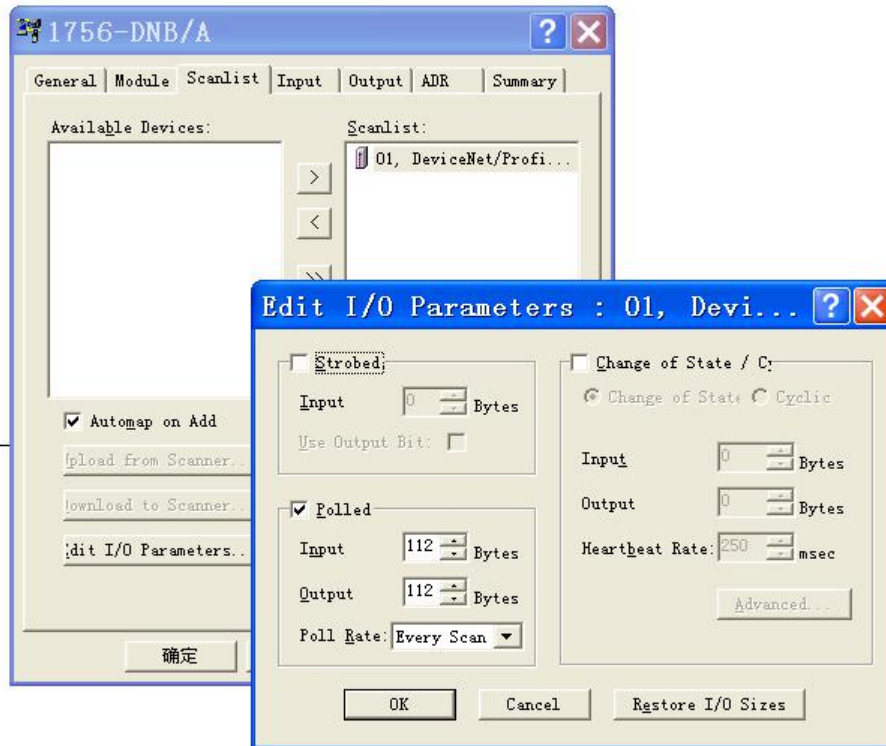
Step three: Confirm input and output mapping.

Users can see Input and Output Properties page; here is the settings on how DeviceNet I / O information of device be associated with 1756DNB memory. Generally use the default settings (Auto-map).
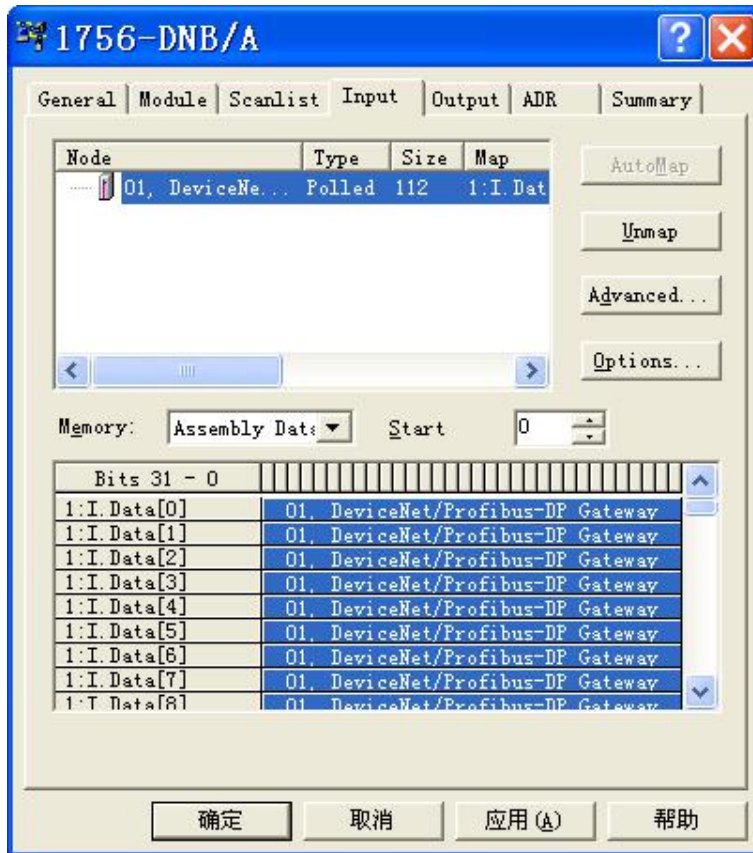
Step Four: Download the appropriate scan list to 1756DNB according to the prompts.

Step Five: Preparing corresponding program, download it to ControlLogix, then change the PLC state to run, if the be in the programming status, PLC take DeviceNet I / O scanning, can not output data (IDLE), but only can input data.

Note: When 1756DNB is in developing PLC program, you need to set a run control bit of 1756DNB to 1.If the module's position in the rack is 1, the bit is Local: 1: O.CommandRegister.Run.

Ladder Example:

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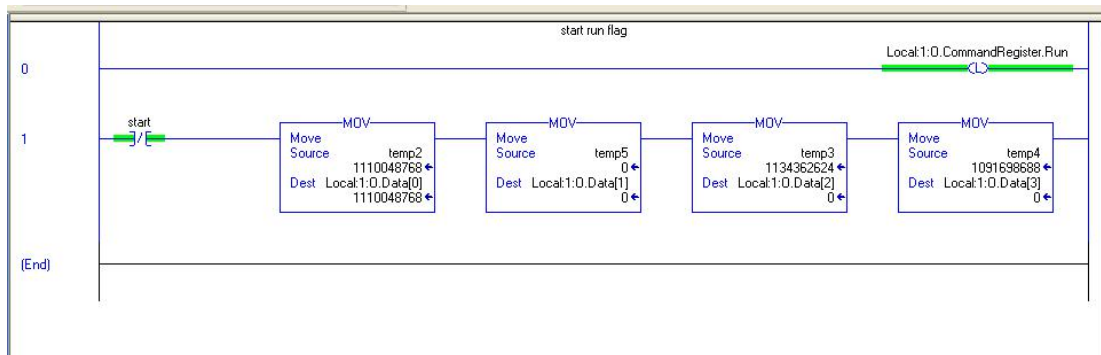
7.4 Select Online Path

From offline to online, users need to select the path.
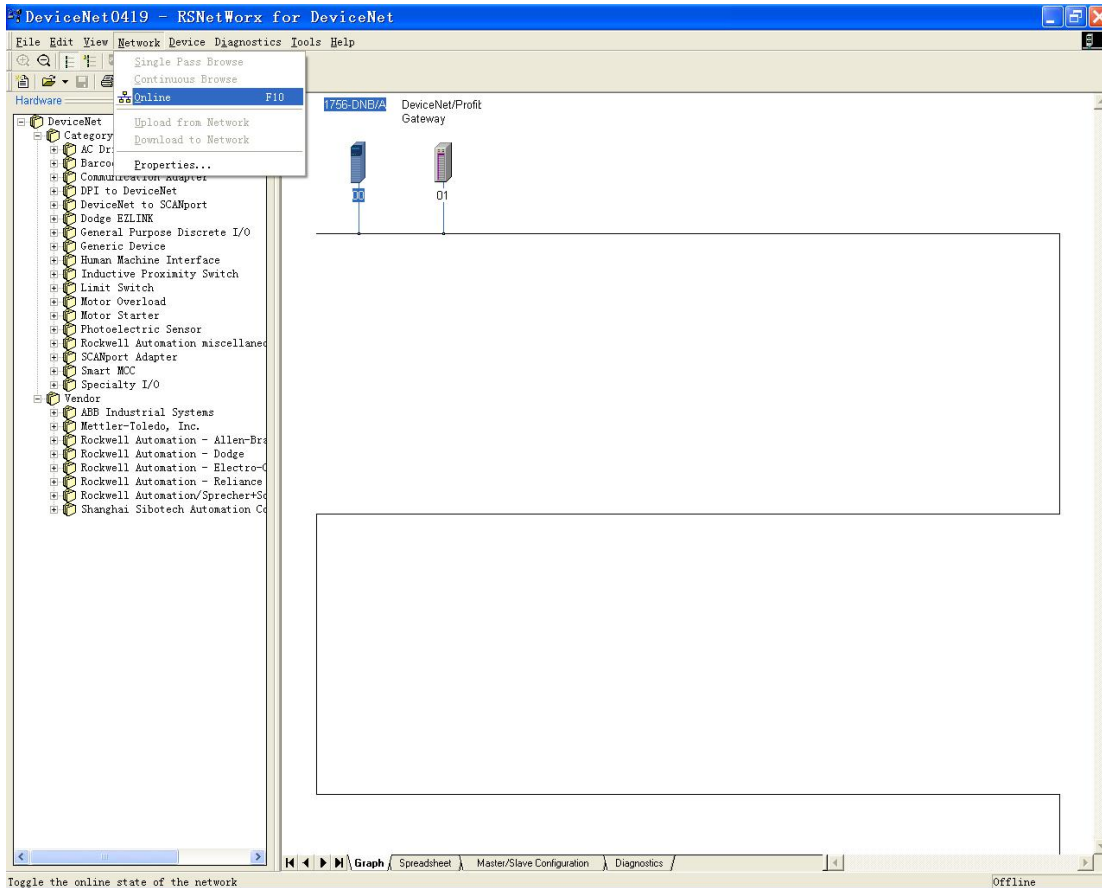
According to actual configuration options, users can select the path, the next map is using serial port (DF1) .
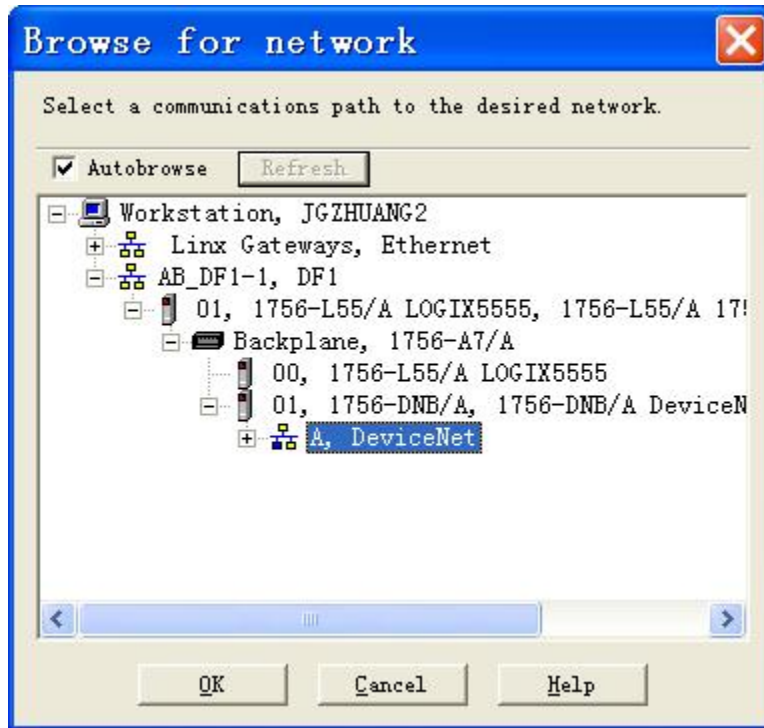
Users have any further questions, please reference RSNetWorx user manual.

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8 PROFIBUS-DP Network Configuration Instruction

The following content explains how to use STEP7 to set PD-100S.

First, copy *.gsd file to the following path：*Step7\S7data\gsd*

1. Open SIMATIC Manager :
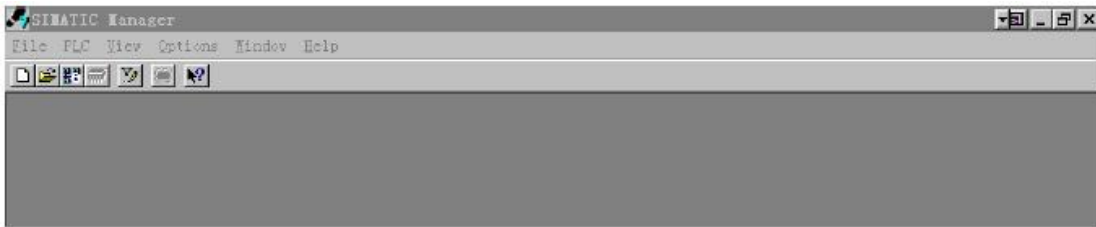
2. Click File->New, create a new file:

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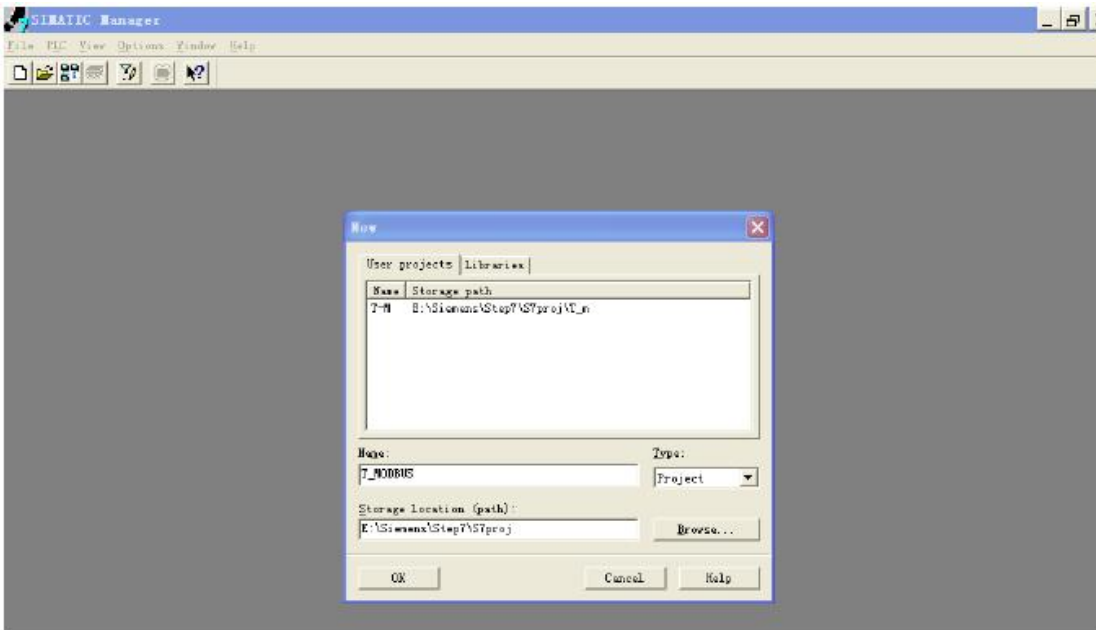
3. Insert->Station->SIMATIC 300 Station:
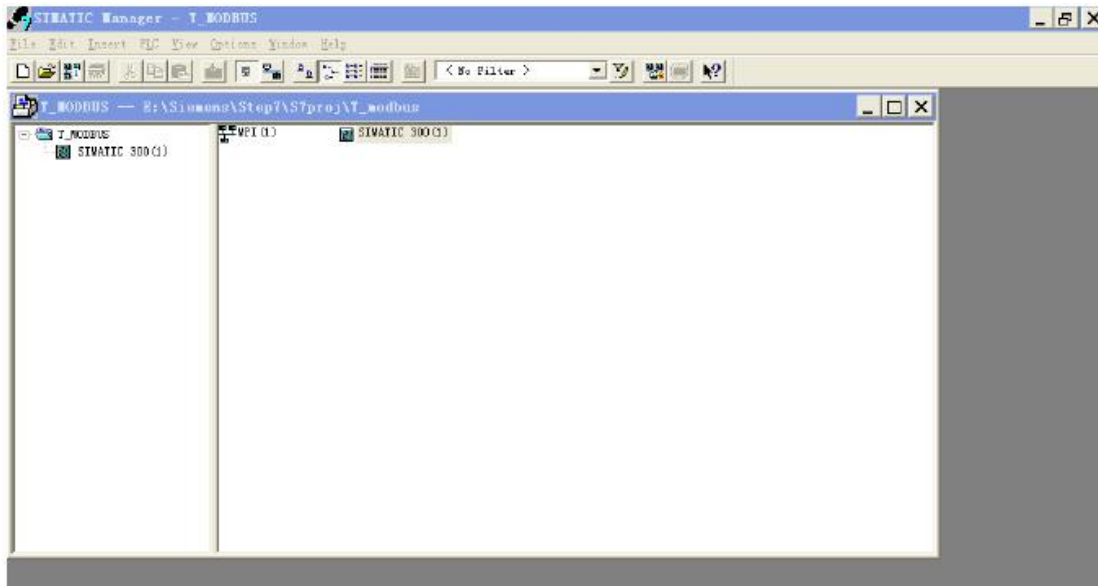
Open S7 PLC hardware configuration: SIMATIC 300(1) ->Hardware, double-click:

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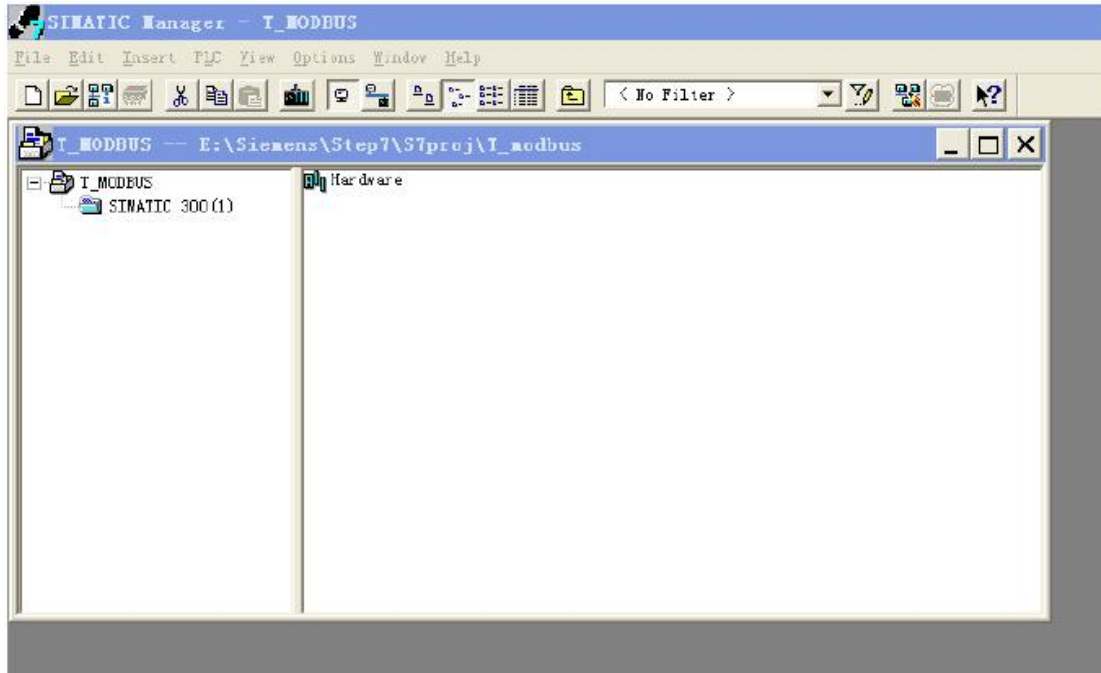
4. Click Options-> Install GSD File, and install GSD of PD-100S:
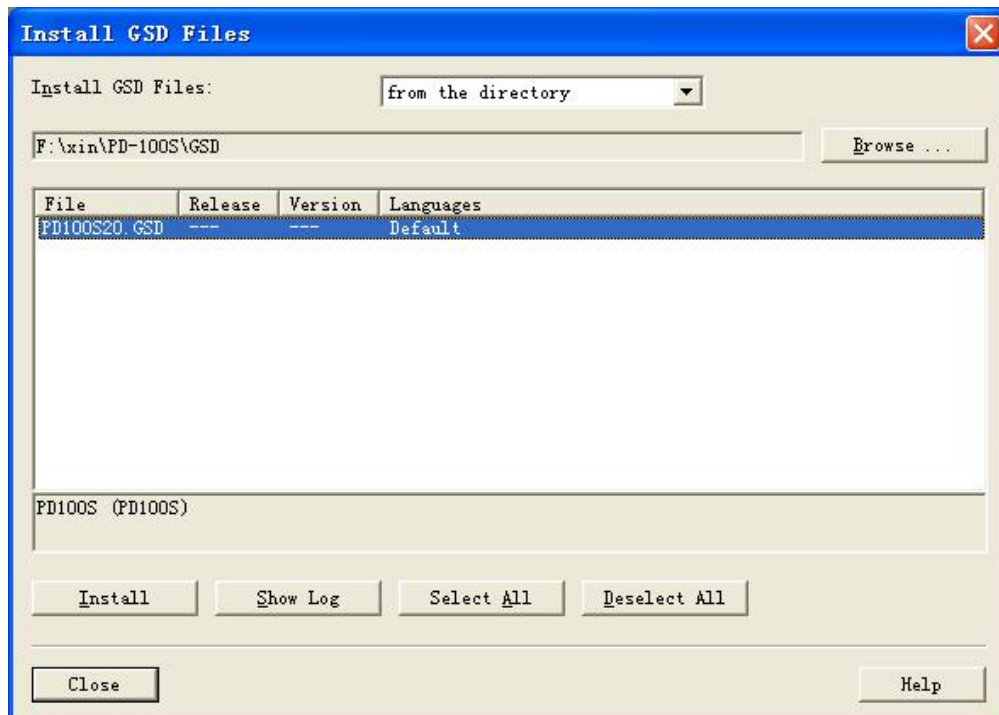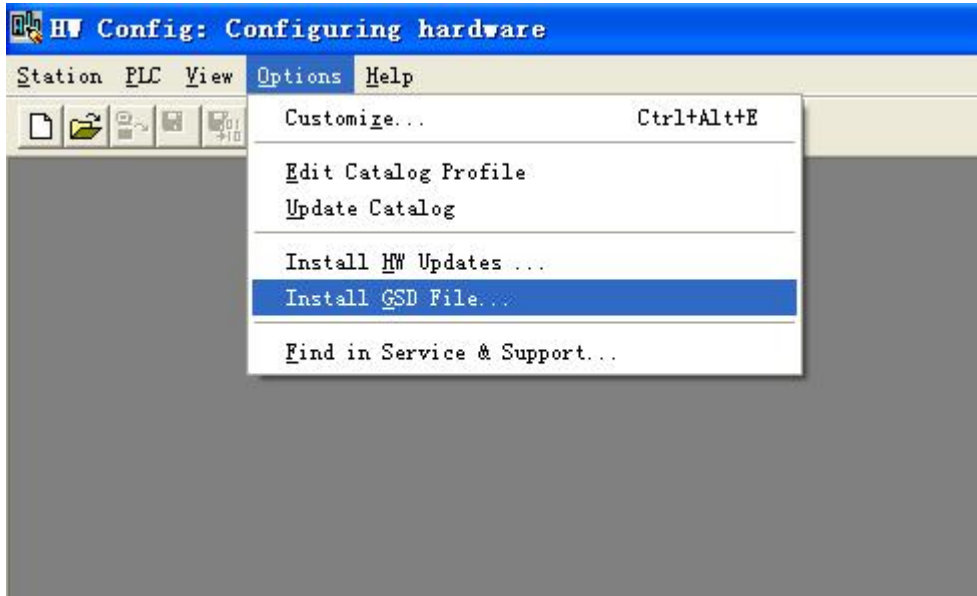
Copy the GSD file in the relevant directory, select and register, you can find your registered device in the hardware configuration interface, the right the window of the hardware configuration interface/ PROFIBUS DP / Additional Field Devices/Converter/PD-100S, as shown as below:

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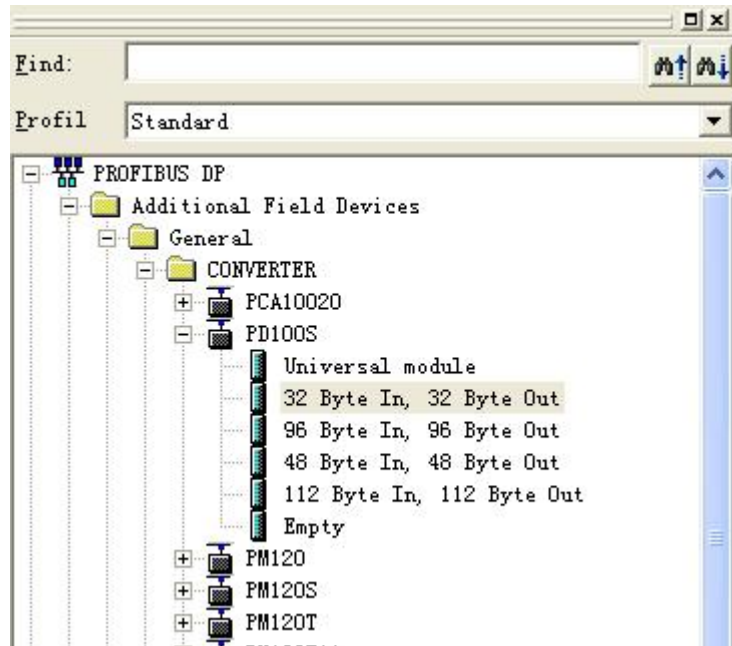
5. Set PLC rack, double-click "Hardware Catalog\SIMATIC 300\RACK-300\Rail":
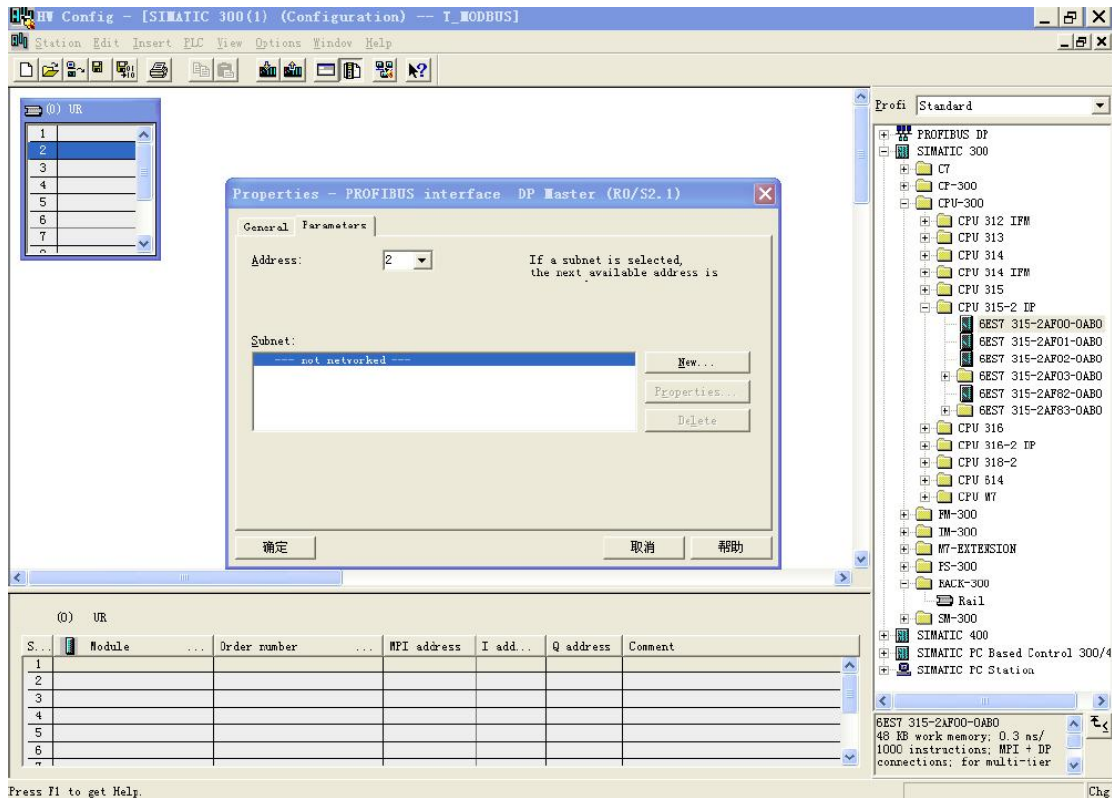
6. Set CPU module, choose the corresponding device types and the occupied slots;

7. Create PROFIBUS-DP network, set PROFIBUS-DP: New->Network settings, choose "DP", choose a kind of baudrate as 187.5Kbps, then click "OK". Double-click it:
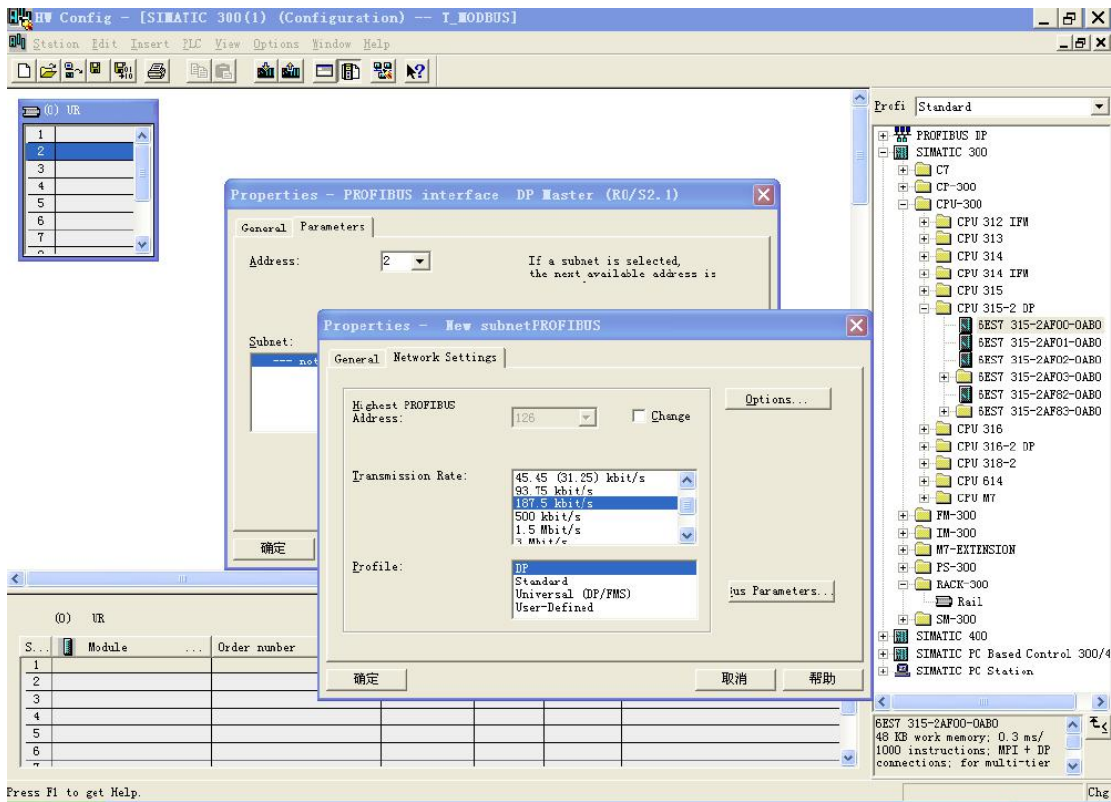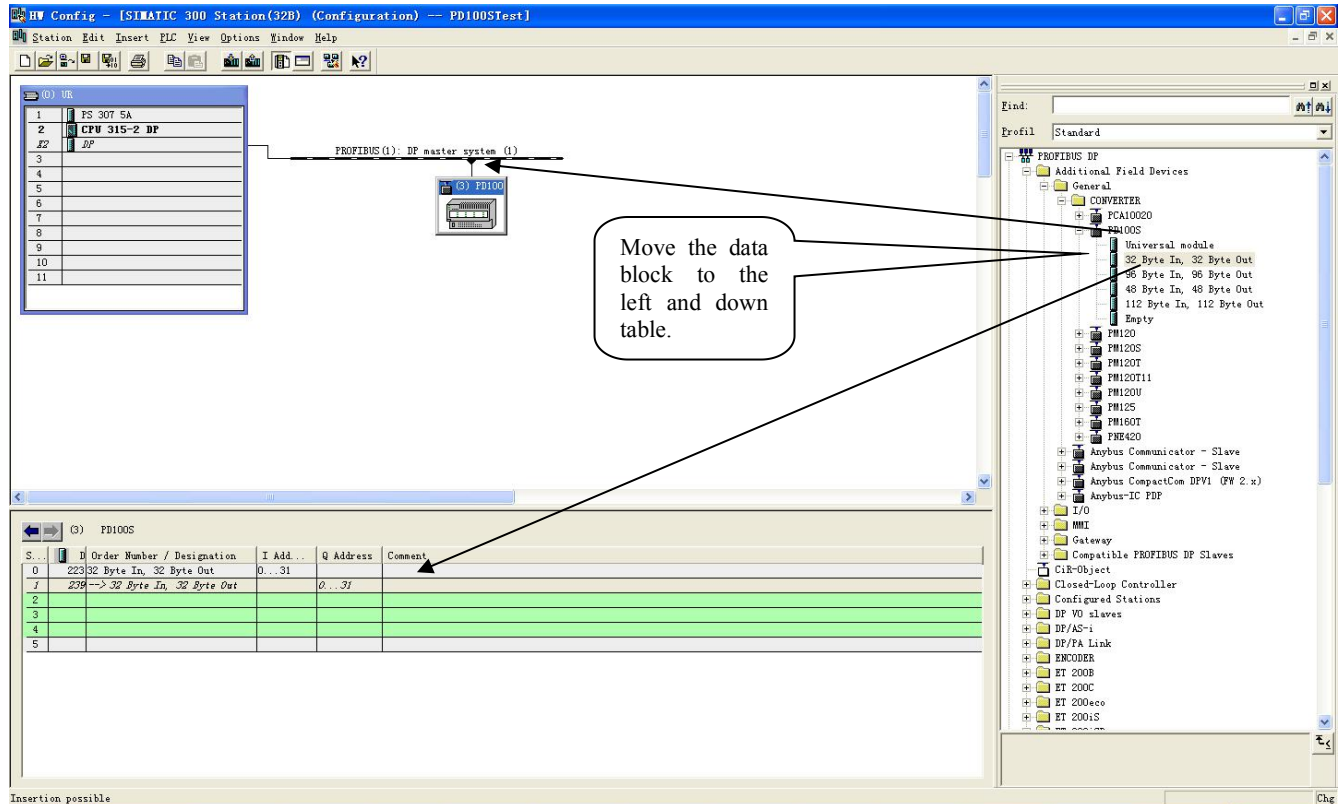

8. Choose address of PROFIBUS Master station:

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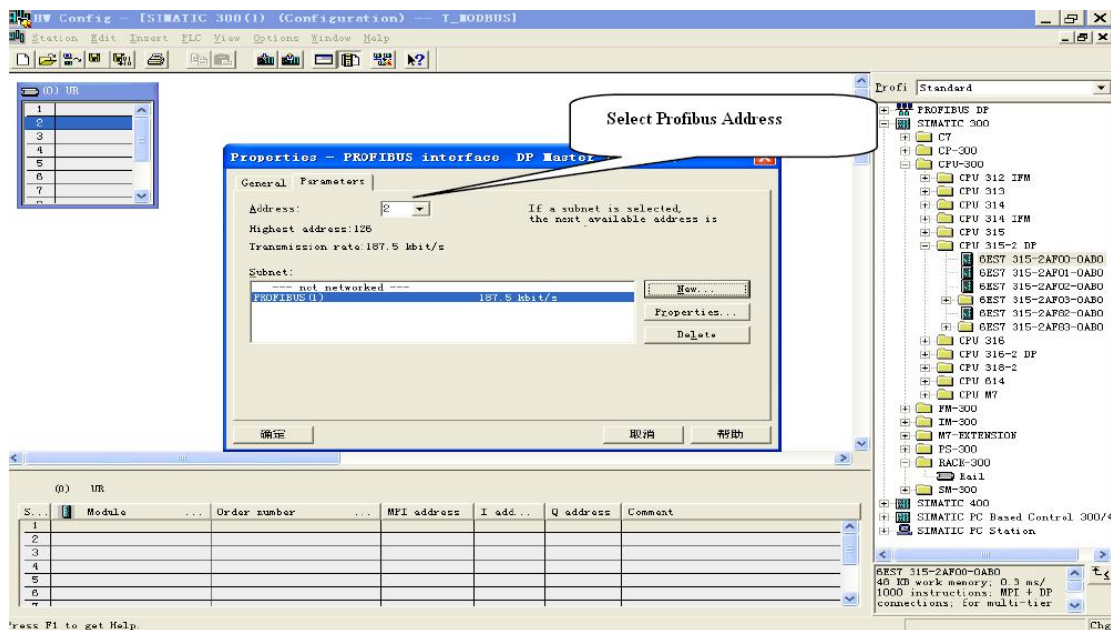
9. Configure PD-100S to PROFIBUS Network, and map the I/O module to S7-300 or other controller's memory.


Operation include two steps. The first step is moving PD-100S to the left and up area, (PROFIBUS-DP bus), the mouse will change sharp, it means you can move it in. The second step is moving data to left and down data mapping table, (PLC memory).

Note: Number of PD-100S can be 32-byte input and output, 96-byte input and output, 48-byte input and output and 112-byte input and output. If the gateway is configured to 48 bytes input / output in Hyper Terminal or DeviceNet configuration interface, you need take "48 Byte In, 48 Byte Out" into the data mapping table. If you drag the data block does not match the configuration of the gateway, PROFIBUS-DP connection can not be established.

The factory configuration of number of bytes is "48 Byte In, 48 Byte Out".

**Note**: Slave station's address should be the same with the setting of module's dial switches!

10. As shown above, right-click input and output mapping of the slot, set the relevant property, as shown below:

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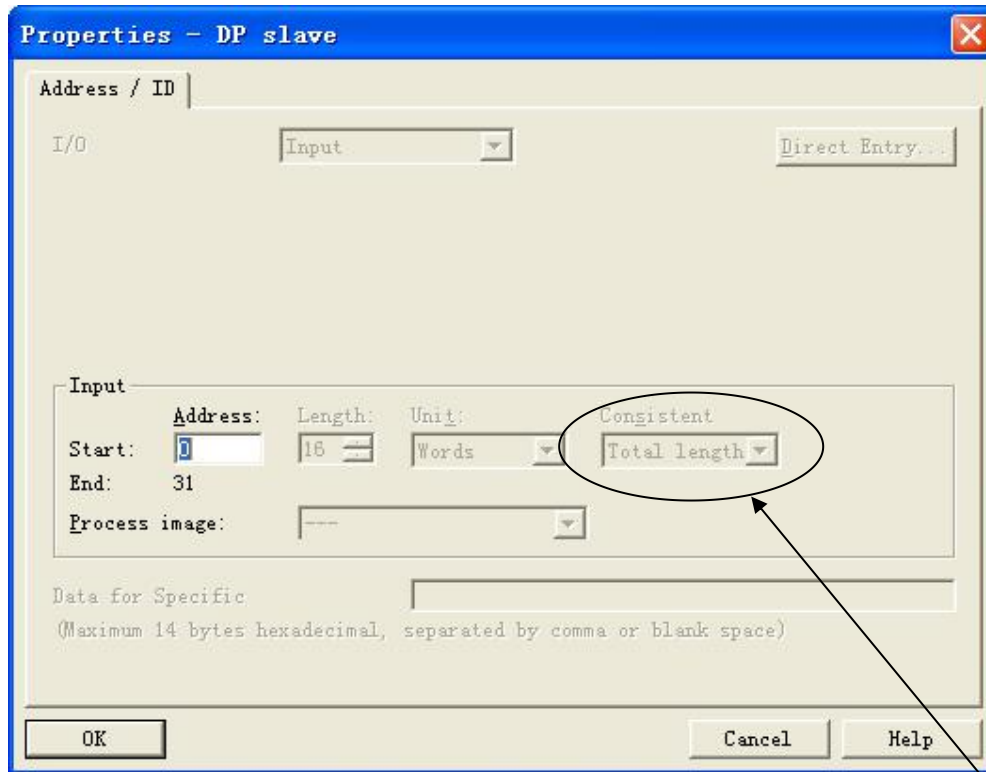
You can set input and output mapping area start address in the page. When the setting is "32 bytes input and output", the consistent is "Total length".

11. Compile and download the configuration to the PLC.

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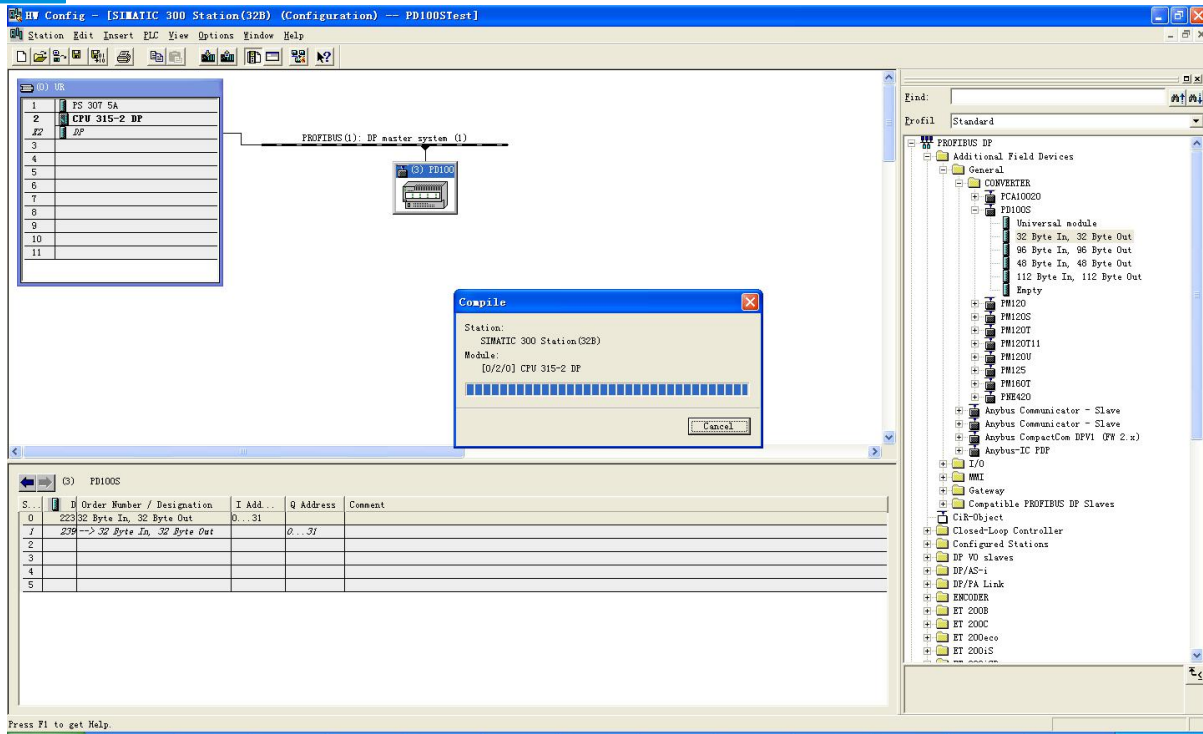
9 How Step7 read and write Gateway Data
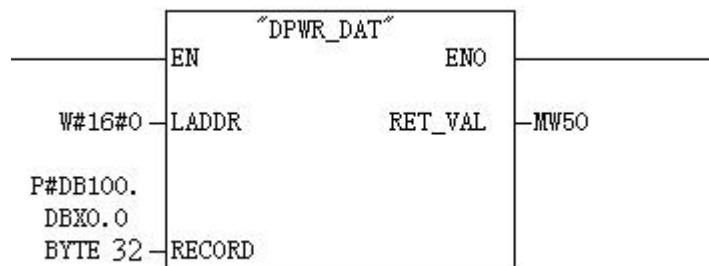
Data blocks which use "Total Length" as "consistent" are shown as follow:

2 Words Input Consistent

4 Words Input Consistent

8 Words Input Consistent

16 Words Input Consistent

2 Words Output Consistent

4 Words Out put Consistent

8 Words Out put Consistent

16 Words Out put Consistent

In the Step7 program, you need use SFC15 (packaged sent) send data and use SFC14 (packaged receiver) receive data.
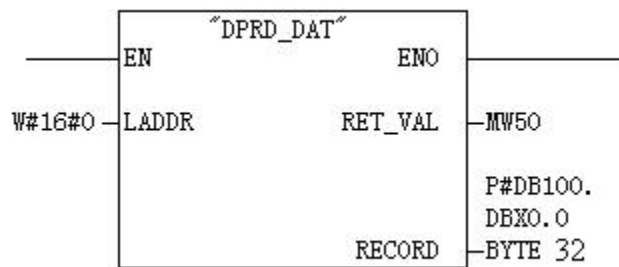
SFC14

SFC15

Data blocks which use "Words" as "consistent"are shown as follow:

```
4 Words Input, 4 Words Output
8 Words Input, 8 Words Output
24 Words Input, 24 Words Output
56 Words Input, 56 Words Output
1 Byte Input
1 Word Input
2 Words Input
4 Words Input
8 Words Input
16 Words Input
32 Words Input
64 Words Input
```
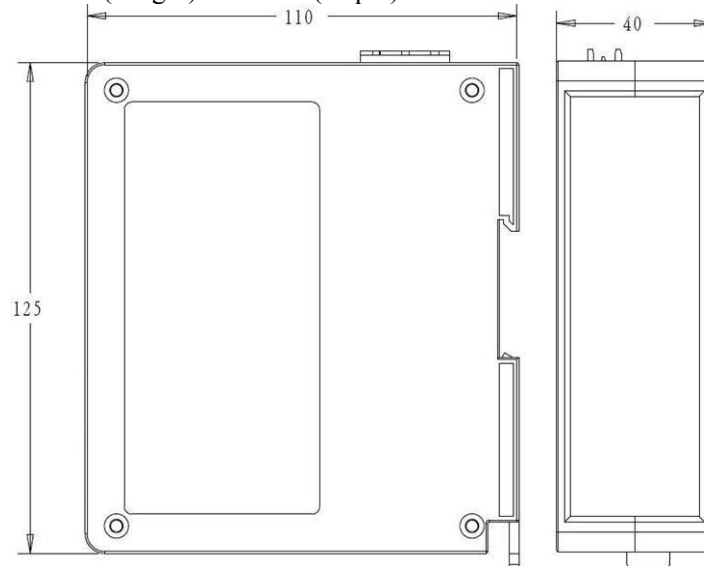
```
1 Byte Output
1 Word Output
2 Words Output
4 Words Output
8 Words Output
16 Words Output
32 Words Output
64 Words Output
```

In Step7 program, you can use "MOVE" instruction read and write data.

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10 Installation

10.1 Mechanical Size

Size: 40mm (Width) ×125mm (Height) ×110mm (Depth)

10.2 Installation

35mm DIN rail

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